

MONDAY, SEPTEMBER 20, 1976



PART III:

DEPARTMENT OF TRANSPORTATION

**Materials Transportation
Bureau**



HAZARDOUS MATERIALS REGULATIONS

NOTE: This Part III amends the hazardous materials regulations contained in 49 CFR Parts 171 through 177. For the convenience of the user, Parts 171 through 177 will be republished in full text in the "Federal Register" issue of Monday, September 27, 1976. The republication will include all amendments made to Parts 171 through 177 from October 1, 1975, through September 27, 1976.

Title 49—Transportation
CHAPTER I—DEPARTMENT OF TRANSPORTATION MATERIALS TRANSPORTATION BUREAU

[Docket No. HM-103; HM-112; Amdt. Nos. 171-32A, 172-29A, 173-94A, 174-26A, 175-1A, 176-1A, 177-35A]

CONSOLIDATION OF HAZARDOUS MATERIALS REGULATIONS AND MISCELLANEOUS AMENDMENTS

On April 15, 1976 the Materials Transportation Bureau published a series of amendments identified as Docket No. HM-103; HM-112; Amdt. Nos. 171-32, 172-29, 173-94, 174-26, 175-1, 176-1, 177-35 (41 FR 15972). These amendments consolidated the air, water, and surface transportation hazardous materials regulations into one volume of the Code of Federal Regulations, 49 CFR Parts 100-189. In addition, changes were made to these regulations pertaining to shipping papers, package marking, package labeling, and transport vehicle placarding to improve the identification and communication of hazards during transportation. Several other miscellaneous changes were also incorporated in these regulations.

Since publication of the amendments, there have been docketed comments, suggestions and petitions for reconsideration in over 225 separate items of correspondence. A total of 98 petitions for reconsideration were received, many of which have been heavily supplemented by later docket submissions. Consideration of this substantial volume of information has been the primary source of the regulatory changes effected by this document.

SUMMARY OF CHANGES TO REGULATIONS

PART 171

SECTION 171.7

Reference to the International Air Transport Association (IATA) has been deleted from this section because there are no references in the regulations to this organization. Two new references, United States Energy Research and Development Administration (USERDA) and United States Nuclear Regulatory Commission (USNRC), have been added since the regulations refer to each of them. Reference to the Compressed Gas Association, Pamphlet C-7 is added to authorize special marking of compressed gas containers.

Sec. 171.8

A number of petitioners commented on the definitions in this section. Many comments suggested changes to the definitions and, in addition, requested that certain terms be added and defined. After careful review, the Bureau has decided that some of the suggestions are valid and has made changes to certain existing definitions and also, has defined several new terms in order to assist in understanding their use in these regulations.

Comments were received concerning the appropriateness of identification of all materials by their technical name. Certain chemical names are so involved

and lengthy that the possibility of error in the name is likely, and thus, a generic description such as "organic phosphate compound" is preferable. This name describes the hazard, is easy to pronounce and is the description given to these materials in general reference documents. The Bureau has modified the definition of "technical name" to include certain generic descriptions as authorized technical names. The definition of "public vessel" is restated to make clear that it covers only vessels owned outright by the Federal Government of the United States so long as they are being used in the public service of that government. These are the only kinds of public vessels that come within the statutory exemption of Title III of the Revised Statutes of the United States which include the provisions of law governing the transportation of hazardous materials by vessel (R.S. 4472, 46 U.S.C. 170).

Sec. 171.11

This section has been deleted as being unnecessary because § 171.1 is the general applicability section which applies to the transportation of hazardous materials by all modes.

Sec. 171.13

In the amendment, the Bureau adopted a rule in § 171.12(b) permitting the use of the IMCO class and label when different from that specified in Part 172 for a material. This was done in an effort to facilitate international traffic, and it was believed that the United States hazardous materials safety procedures would not be adversely affected. A number of petitioners requested a reconsideration of the matter suggesting complete recognition of IMCO safety standards. The Bureau agrees, following consultation with the United States Coast Guard, that persons involved in the overseas maritime area are sufficiently acquainted with the IMCO requirements and that broad recognition should be given to its standards when other modes of transport are not involved. (See §§ 176.11 and 176.27.) However, the Bureau's reconsideration has caused it to determine that imported materials or those intended for export could, according to the amendment, be described on documents during transportation between points other than within port areas in a manner that would be confusing and ambiguous to carrier, emergency, and enforcement personnel. For example, according to the IMCO Code, octafluorocyclobutane would be identified by the class number 2 on a shipping document to indicate its class or by the entry "Gas 2". The entry required by § 172.202 would be "Compressed gas, n.o.s. nonflammable gas." The Bureau is certain that personnel concerned with proper communication of hazards through documents are not sufficiently familiar with the IMCO class designation system so far as transportation by air, highway, and rail are concerned and has, therefore, added a condition to § 171.12(b) relative to the class entry on shipping documents covering shipments transported by those modes. The Bureau

will give full consideration to future proposals and suggestions on how improved facilitation of international traffic in hazardous materials can be accomplished while maintaining a sufficient degree of compatibility with the Department's regulations. For those persons interested in such matters, it is suggested that Section 9 of the General Introduction to the IMCO Dangerous Goods Code be examined (pp. 0019, 0020). In particular, it should be noted that a label facsimile may be used in the document sequence (of which there are eight entries) in place of the class number. The advantages of the label facsimile is its close association with the U.S. class identification. While the IMCO class number 2 only identifies a gas, the label facsimile would give the distinction between flammable, nonflammable, and poison gases, or certain combinations thereof.

Several petitioners stated that paragraph (c) be revised to permit greater flexibility in marking specification identifications on packages. The Bureau agrees and has modified the paragraph accordingly.

Paragraph (d) is revised to permit transportation in accordance with the IMCO Code in port areas except for the shipping paper and when the transportation is entirely by vessel.

PART 172

Sec. 172.100(b)

The last sentence of paragraph (b) (1) was changed because of the number of comments received concerning the use of DOT shipping names for nonregulated materials. DOT has no requirements for a material it does not regulate and use of the asterisk entries is not intended to suggest otherwise.

Sec. 172.100(c)

A number of comments and much discussion ensued from an attempt to elaborate on the correct shipping name of a material (see comments on § 172.101 for additional remarks on the shipping name). One word was added to the general description for increased understanding, and three additional paragraphs were added. One paragraph points out that in a "See" entry, if both names are in Roman type, either name may be used as a shipping description. The second addition permits use of a shorter shipping name for some entries. Some shipping names are quite long, particularly if the qualifying description referencing the concentration of the active ingredient or desensitizing agent is required as part of the shipping description. (Including the qualifying description is an aid in establishing the acceptability aboard passenger aircraft in many cases; or with explosives this establishes the hazard class.) Section 172.100 (c) is amended to permit use of the actual concentration of active ingredient or desensitizer rather than stating the concentration range specified in the Hazardous Materials Table. Thus, a material consisting of 75% nitrocellulose and 25% water may be optionally described as "Nitrocellulose, with 25% water" or as

"Nitrocellulose, wet with not less than 20% water."

The term "mono" is made optional when it appears as part of the proper shipping name. Correcting every entry in the Hazardous Materials Table to state the optional shipping name is not warranted.

SEC. 172.100(e)

Poison labels. A conflict was presented by the requirement of § 172.100(e) that a POISON label be on all hazardous materials meeting the definition of a Poison B as defined by § 173.343; and the labeling requirements of § 172.402. For many years there has been a requirement for the identification of multiple hazards by multiple labeling, if the material was a Class A Explosive, a Radioactive Material, or a Poison A. The original notice published on this consolidation proposed that in addition to this requirement, multiple labeling be used for Flammable liquids, Flammable solids, Compressed gases, and Oxidizers that also meet the definition of a Poison B material. This rule making procedure modifies the labeling requirement to conform with the notice of proposed rule making. In keeping with this, the requirement for an additional POISON label on certain corrosive materials has been deleted consistent with the notice. It is quite possible that there are materials listed by technical name in the table for which an additional POISON or other label should be specified, however, the data is not available or is not adequate to make this decision for inclusion in the table at this time.

Water Reactive or Dangerous When Wet. Petitions were received asking for the deletion of this notation or for the extension of this notation to cover liquids (it is now only applicable to Flammable solids). The reasons for deletion were given as: (a) The need for a more quantitative definition; and (b) the need to differentiate between those reactions that produce a poison gas and those that produce a flammable gas. The Bureau believes that this warning is needed for emergency response information, and that a qualitative evaluation of the potential hazard is better than no warning at all. In the notice it was proposed to identify by the addition of a POISON label those materials that would release a poison gas by reaction with water. This resulted in the application of three labels to some materials (FLAMMABLE SOLID, DANGEROUS WHEN WET, and POISON). Objection was taken to this many labels, and the POISON label requirement was removed.

The need to extend this warning to certain liquid materials is noted, and may be the subject of later rulemaking but it is not within the scope of this amendment.

SEC. 172.100(f)

Packaging section numbers. For several materials listed in § 172.101, a change in hazard class has resulted in references to packaging sections not numerically located with sections for materials with the same hazard class; i.e., hydrogen peroxide, now classed as an Oxidizer shows

exceptions and packaging requirements in sections normally reserved for Corrosive materials. The Bureau has found no problem with the packaging history of hydrogen peroxide and has changed the class to more accurately reflect the emergency response required and to improve mixed stowage conditions. In addition, the exceptions and general packaging requirements for oxidizers were written many years ago without any provisions for liquid oxidizers and thus, general packaging requirements for corrosive liquids are preferable. Upon recodification of these regulations such discrepancies will be corrected.

SEC. 172.100(g)

Forbidden on passenger aircraft. Petitions were received concerning the need for carrying at least small quantities of some currently forbidden hazardous materials on passenger aircraft; noting that with proper packaging there would be no appreciable hazard presented by these materials on aircraft. This may be true, however, the Bureau believes that special packaging should be subject to public review and further study. In the continuing review of transportation requirements for air safety more specific packaging for air may result, however, the Bureau is not prepared to undertake such a study for this rule making.

Hydrochloric and hydrofluoric acids. The Table has been amended to authorize these materials aboard passenger-carrying aircraft subject to the same limitation as in the past pending further development of criteria pertaining to the transportation of materials that are corrosive to aluminum aboard aircrafts.

Additional exemptions for passenger aircraft. Petitions were submitted for additional items aboard passenger aircraft as nonregulated materials. Items such as self-contained breathing apparatus, halide detectors, and gas chromatographs, were specifically named. We believe these petitions may have merit, however, they are not within the scope of this rule making and will be the subject of separate rule making. However, considered within the scope of the rule making is reconsideration of the application of limitations of flammable liquids having flash points from 73° to 100° F. (See discussion under "Flammable liquids aboard aircraft.")

SEC. 172.100(h)

Stowage of corrosives aboard vessels. A petition was received to authorize stowage of liquids, corrosive only to skin, and all corrosive solids below deck. There is no presently adopted means of identifying those liquids corrosive only to skin, and thus, use of such a criterion is not feasible. The stowage of corrosive materials, n.o.s. below decks is restricted because of the unknown nature of the materials. Stowage requirements for n.o.s. materials must of necessity be more restrictive than those generally applied to known materials.

SEC. 172.101

Miscellaneous corrections. A number of petitioners pointed out coding errors or

errors in section references, etc. These corrections are not being addressed on an individual basis in the interest of conservation of time and printing space.

Column Headings. The headings on the Hazardous Materials Table have been revised to some extent as the result of petitions received. In column 4 the word "exempt" has been changed to "excepted", for conformity with the use of this word in the regulations. Columns 4 and 5 have been combined under one heading, "Packaging" and subsequent columns renumbered accordingly. This is necessary because in a number of cases, the exceptions and packaging requirements are in the same section and in other cases there are no packaging requirements if certain conditions are met as noted in the exception column.

The columns stating the maximum quantity in one package for air shipments has been changed to read "Maximum net quantity in one package" thus, eliminating the ambiguity of the quantity referenced in the columns under this heading. It should be emphasized however, that this limitation extends only to a package that may be offered for transportation aboard aircraft in conformance with the minimum requirements. It does not preclude further packing in accordance with § 173.23, a practice that could often enhance safety when more than one package is in a shipment.

Spelling. The spelling of a technical name of a material can be critical. Ethylene amine is a different material than Ethylene imine. Thus, the importance of using the exact spelling has been emphasized. With this in mind, an attempt has been made to up-date the spelling or form of the word used in describing a material. Using the word "Oxidizing material" for an oxidizer is misleading from a technical point of view. Wood when it burns is oxidizing. Iron when it rusts is oxidizing, yet neither of these materials is considered an Oxidizer. Due to the use of preprinted shipping papers and marking on reusable containers some of these names will be continued in § 172.101, however, it should be noted that it is planned to delete these names at some later date. Included in these names are:

Pyroforic.—This may be a modern spelling as noted by one petitioner, however, standard dictionaries do not carry this spelling. The word is "pyrophoric".

Fluosulfonic acid.—This is a shortened version of the proper name fluorosulfonic acid, and may not be recognized or identified by other than the shipper or consignee.

Also, in some cases, it is questionable whether some names are any improvement over a generic description such as corrosive liquid n.o.s.

Solid-liquid classes for poisons, corrosives and oxidizers. A petitioner suggested that there is a need to distinguish between the solids and liquids of hazard classes other than flammables. Flammable gases, flammable liquids, and flammable solids are in three different hazard classes, whereas, only one class is assigned to each of the following: Oxidizers, Poisons, Corrosives, Radio-

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active materials, and Explosives. The regulations generally distinguish between solid, liquid, and gas states by the packaging requirements, however, there is currently no requirement for noting the physical state on shipping papers, or package markings. The physical state of the hazardous material is not always apparent from an inspection of the shipping container. It was suggested that each shipping name or hazard class be modified to indicate the physical state of the material. It is felt that this is beyond the scope of current rulemaking and may be considered at some later date.

Proper shipping name. A number of petitions were received concerning the selection of a proper shipping name of a material. Much objection was taken to the statement that "When a proper shipping name is preceded by an asterisk, this name should be used only for materials meeting the definition of the hazard class(es) listed for that name." This was meant to convey the fact that such entries as "Insecticide, liquid" may not be used to describe a corrosive liquid since corrosive material is not listed as a hazard class for this shipping name. The Bureau cannot specify shipping names for materials that it does not regulate.

"When qualifying words are used as part of the proper shipping name, their sequence on package markings and shipping paper descriptions is optional." This means that the entry "Ammonia, anhydrous" may be used as it appears or as Anhydrous ammonia. In the entry "Compound, tree or weed killing," the following combinations are permissible:

Weed killing compound—Compound, weed killing.
Tree killing compound—Compound, tree killing.
Tree or weed killing compound—Compound, tree or weed killing.

An attempt was made to facilitate the use of § 172.101 by a brief discussion of the selection of a proper shipping name in § 172.100. Many petitions were received which directly or indirectly reflected a wide variation in the practice of selection of the proper shipping name. Apparently the selection of the shipping name sometimes is based solely on the economics of the packaging specified or the freight classification and disregards the hazard properties of the material being shipped. The solution to this problem is felt to be too involved for a complete review in this rule making and will be considered at some later date.

Technical name. Several petitions expressed concern regarding the definition of a technical name. It is felt that the time has come to introduce more scientifically correct names into the regulations, since these requirements are subject to review by many individuals who do not know that "Fluosulfonic acid" is the same as "Fluorosulfonic acid" and that "Methyl parathion, liquid" is not really methyl parathion, but a solution of 80% methyl parathion and 20% xylene. It has been suggested, that the Hazardous Materials Table be modified so that the shipping name is always qualified by an n.o.s. unless that name is

an acceptable technical name. The action suggested is not within the scope of the rule making and may be the subject of future rule making. The definition of "technical name" has been modified to permit the use of certain generic descriptions as technical names.

Additional Entries in the Hazardous Materials Table. "Isopropyl percarbonate, unstabilized" has been added to the Hazardous Materials Table. It had been a part of present regulations for some time and was inadvertently omitted. Several additions are made to provide an alternate shipping name based on the need to continue current markings, or with the intent to clarify the material description, however, they are not considered new entries. The Bureau believes that the addition of a new entry to the Hazardous Materials Table should be open to public review and comment because each new entry is more than a provision for use of a technical name as a proper shipping name of a material. A new entry also specifies the hazard class, the labels required, the packaging, stowage, and any other restrictions felt necessary for the safe transport of the material. Petitions for addition to this table will be reviewed at a later date.

Amendments to Table. Petitions regarding the Hazardous Materials Table are reviewed in alphabetical order by commodity as follows:

Aerosol, each aerosol container not exceeding 50 cu. in. capacity. This entry has been deleted as it is believed aerosols are adequately covered by the exceptions permitted as consumer commodities.

Aluminum powder. Several petitioners opposed the Bureau classification of this material as a flammable solid. Further comments were concerned with the packaging requirements, particularly the weight limitations. The statement was made that there have been no packaging requirements for this material. 46 CFR 146.27-100 stated both packaging requirements and weight limitations for this material. These are the requirements currently stated in the consolidated regulations. The statement was made that this material was not regulated in surface transportation. This could be true, depending upon the particular grade or type of aluminum being shipped, however, deletion from the hazardous material table does not automatically imply that a material is not regulated. A material not specifically identified, but meeting the definition of a hazardous material must be shipped as a n.o.s. material or by some generic description listed in the regulations.

The major controversy on this material occurred in 1953, and was concerned mainly with the removal of aluminum scrap and dross from classification as a hazardous material. A letter from Reynolds Metals Company dated December 10, 1953 enclosed a memo from a metallurgical consultant that includes the following points pertaining to this problem:

1. A study performed by the U.S. Bureau of Mines in 1943 concludes that particles larger than those passing a

100 mesh screen can not be considered flammable.

2. It is the surface area per unit mass of material (specific surface) that make metals flammable.

3. Paint pigments are flat particles, in as far as it is possible to control the shape produced, and the specific surface will be much greater than with spherical particles.

4. The powders used for pyrotechnics, explosives, and exothermic chemical reactions are carefully controlled as to size and shape of particle and they are protected from the oxygen and carbon dioxide of the air during the later stages of their manufacture. They are packed in suitable containers with inert atmosphere and are suitably labeled for shipment.

These statements, especially the last one, would seem to establish the flammable characteristics of aluminum. The uncertainty of the description of the particle for which this is appropriate results in the addition of an asterisk to this entry. Thus, the correct classification is the responsibility of the shipper.

Ammonium hydrogen fluoride. Petitions were received concerning the proper hazard classification of this material, i.e., ORM-B vs. Corrosive solid. The entry has been deleted, and the hazard class of this material will be re-evaluated at some later date.

Calcium carbide. Petitioners have recommended that a Dangerous When Wet label be required for calcium carbide. The addition of this label is required under § 172.402 and the correction has been made to this table.

Camphene. Objection is taken to the classification of this material as an ORM-A. This material has been listed for a number of years in 46 CFR as a hazardous article, further described as colorless crystals having a strong camphor-like odor that gives off heavy dense smoke when burned and will add materially to a fire. The Bureau believes that additional consideration is required before deletion of this entry.

Carbon dioxide. A comment was received that regulation of this material in the solid form for air and water shipments is without normal due process. The notice of proposed rule making of 1974 contained this entry and it is maintained unchanged in the amendment.

Charcoal. A petition for removal of the classification of charcoal as a hazardous material has been received. Charcoal has been regulated for many years as a hazardous material. Additional time will be required to consider this matter and deregulation may be the subject of later rule making.

Combustible liquids. The blank spaces appearing in the packaging column and in the quantity permitted aboard aircraft columns for combustible liquids was not clear to many commenters, therefore the blank spaces have been filled in, showing in most cases no packaging requirements for combustible liquids and no limit aboard aircraft.

Compressed gas, n.o.s. This description has been returned to the hazardous

materials table as a proper shipping name because of the number of containers currently marked with that name. Flammable Gas and Nonflammable Gas n.o.s. have been added to provide shipping names that correspond to the hazard class.

Consumer Commodity. An objection was taken to the requirement that the maximum gross weight in one package be restricted to 65 pounds for air shipment. The purpose of this limitation was to place a maximum on the aggregation of materials within the minimum packaging specified for that materials falling under this definition. It was not intended to authorize unlimited quantities of inside packagings under this entry. This limitation applies to all consumer commodities in the ORM-D class as specified in § 173.1200(a) for all modes of transportation.

Corrosive solids, stowage. It was requested that stowage of corrosive solids be permitted below deck, in water shipments. The current 46 CFR does not permit stowage of corrosive solids below deck and we have no justification for changing this requirement at this time.

Cotton. The hazardous materials table contained no reference to stowage requirements for water shipments. This oversight has been corrected.

Dichloroisopropyl ether. A petition was received that this material had been misclassified as a corrosive material and it should be an ORM-B, however, no actual laboratory test data or documentation was submitted therefore, no change is made in the stated class of corrosive material.

Dichloropropene and propylene dichloride mixtures. A petition was received stating this mixture is noncorrosive according to the DOT definition of a corrosive. No laboratory test data was submitted to substantiate this statement and thus § 172.101 is unchanged.

Dinitrophenol solutions. The requirement that this material be stowed away from heavy metals and their compounds is based on the IMCO warning that this material may form extremely sensitive explosive compounds from contact with heavy metals and their salts.

Epichlorohydrin. A petition objected to the addition of this entry in the amendment without appropriate rule making. The Bureau agrees and has removed the entry.

Ethylene diamine. This was proposed as a new entry in the hazardous materials table. There is some dissension over the flash point of this material and therefore the entry has been deleted.

Ethylene glycol diethyl ether. A petition was received objecting to the omission of a W in column I for this material and similar entries because they were taken from 46 CFR. These materials and any other materials meeting the definition of a combustible liquid are regulated by all modes of transportation.

Flammable liquids aboard aircraft. A petitioner recommended that the quantity authorized per package for flammable liquids with flash points between 73°F. and 100°F. aboard aircraft be in-

creased to reflect the quantities permitted before classification as a flammable liquid. These materials were newly classed as flammable liquids because the Bureau has determined that additional restrictions were necessary for the safe transportation of these materials in all modes of transportation. Certain provisions were made for these materials. Under Docket HM-102 the packaging and labeling requirements for capacities of one gallon or less, and the requirement for specification containers up to 110 gallons, are excepted if the flash point range is noted on the outside container. The Bureau is changing the quantity limitations aboard aircraft for these materials (FP 73°-100°F.) to more properly reflect its intent under HM-102 when the flash point is marked on a package.

Fluorine. A petition was received objecting to the classification of fluorine as a nonflammable gas requiring an oxidizer and a poison label. Previously fluorine was classed as a flammable compressed gas. Fluorine is not flammable by any of the test procedures specified in § 173.300. Fluorine is an oxidizer, and will react violently with flammable materials. With the choice of classifying as either a nonflammable or flammable gas, the choice must obviously be as a nonflammable gas, however, by requiring the oxidizer and poison labels on this material, the Bureau believes safe handling and better safety in storing (stowage) will be attained.

Formaldehyde. Based on petitions received, the entry formaldehyde as formalin solution has been changed to read formaldehyde or formalin solution which permits use of either as a shipping name.

Halogenated hydrocarbons. A petitioner requested that the names used for halogenated hydrocarbons be modified to reflect the current scientific and technical standards for naming these compounds by deleting the word "mono" and placing the halogens in alphabetical order. This recommendation is in keeping with the Bureau's up-grading of shipping names and these names are permitted as alternate shipping names for these materials.

Hexaethyl tetraphosphate, liquid. A reference to § 173.345 permitting exceptions for this material was in error. No exceptions are permitted, as noted in previous regulations, and the material is not acceptable aboard passenger aircraft.

Hydrazine. The notice proposed to class anhydrous hydrazine as a flammable liquid, and hydrazine (containing 50% or more hydrazine) as a corrosive material. Closer study of these two entries reveals a built in problem resulting from the wording used in the shipping descriptions. The entries as stated would permit a solution containing a trace (1%, 0.01%) of water to be shipped as corrosive and only the anhydrous form to be shipped as a flammable liquid. This is not a reasonable conclusion, since the properties of hydrazine are not significantly changed by the addition of a trace of water. The descriptions were changed to note that concentrations of

64% or more are flammable and concentrations less than 64% are listed as corrosive as an asterisk entry.

Hydrazine is reported to have a flash point of 100°F., with flammable limits of 4.7% to 100% by volume in air. The reactivity of the material is highly subject to catalysis. The ignition temperature in the presence of iron oxide (rust) has been reported as low as 75°F., thus, spontaneous ignition may take place when exposed to air if the spill occurs upon a surface which may catalyze the reaction.

The Bureau believes that the emergency response procedures for hydrazine and concentrated hydrazine solutions is sufficiently similar, that no differentiation should be made in their hazard class. These materials when packaged properly are stable under normal transportation conditions. When catalyzed, as might occur in a spill condition or when subjected to external heating, as in a fire condition these materials can decompose with violence. The Department has on file such an incident that occurred with a railcar of 55 gallon drums of 95% hydrazine. This is the type of reaction that emergency response personnel may expect from a flammable material but not from a corrosive material. The packaging requirements for the material have not been changed, only the class and thus, the labeling and placarding requirements are those of a flammable liquid and not a corrosive.

The break point (64% hydrazine) between the flammable and corrosive class was taken as that equivalent of hydrazine hydrate. Objection was taken to this selection of concentration without public notice. The entry in § 172.101 has been changed back to that published in the notice.

Hydrofluoric acid solution. It has been petitioned that the asterisk be removed from this entry, stating that the smallest trace of this material requires medical treatment. The Bureau believes that any concentration meeting the definition of a corrosive material should be regulated, however, regulation does not cover specific medical treatment for contact with this material. The removal of the asterisk will not aid in conveying the proper medical treatment. This message must be conveyed by means other than those currently available to DOT.

Hydrogen, cryogenic liquid. Corrections were made to this entry to permit the use of the current shipping name for this material, i.e. hydrogen, liquefied.

Insecticide, liquid. A petition was received concerning the omission of n.o.s. from "insecticide, liquid" when classed as a flammable or combustible liquid. The n.o.s. appears only on the Poison B entry. The flammable and combustible liquid entries have been changed to n.o.s. entries.

Insecticide liquid pressurized. A petition was received criticizing the classification of a Poison B material as a Poison A when pressurized above 40 psia. The definition of a Poison A refers only to liquids and gases. There is no quantitative criteria for a Poison A in § 173.326. A Poison B liquid or solid is defined in

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§ 173.343. This includes a specific test for toxicity by inhalation. It is the opinion of the Bureau that a material meeting the definition of a poison by inhalation must be regulated as a poison. If that material, in the form shipped, meets the definition of a compressed gas as well as that of a poison it must be regulated as a poison gas.

Methyl bromide. The entry in the table of "Methyl bromide and nonflammable nonliquefied compressed gas mixture, liquid (pressure not exceed 40 psia at 70° F.)," classed as a Poison B material with a reference to packaging in § 173.353, was opposed because this material has been shipped at pressures exceeding 40 psia for many years in accord with a DOT interpretation of this entry. Methyl bromide does not meet the current definition of a poison material, however, due to fatalities that have occurred with this material and the fact that the system is pressurized, the Department has classed the pressurized system as a Poison B liquid. The parenthetical phrase has been deleted from this description in accord with the past DOT interpretation of the regulation.

Methyl methacrylate monomer, inhibited. A coding error resulted in this entire entry being printed out in column 6. This error has been corrected.

Methyl parathion mixture, liquid, (containing 25% or less methyl parathion). Objection was taken to making the complete description a shipping name. This was purposely done to enable aircraft operators to distinguish between grades that were permitted aboard aircraft and those that are not. See § 172.100(c) (6) concerning percentage descriptions.

Motor fuel antiknock compound. Based on petitions received the alternate shipping name of "Antiknock compound" has been provided.

Motor vehicle, etc. including automobile, motorcycle, truck, tractor, and other self propelled vehicle or equipment powered by internal combustion engine, when offered new or used for transportation and which contain fuel in the engine or fuel tank or the electric storage battery is connected to either terminal of the electrical system. These items have been assigned to the ORM-C class and the packaging references are listed as §§ 173.120, 173.250, 173.257, 173.306, 175.305 and 176.905.

Nitric acid. A petition was received concerning the wisdom of separating nitric acid into two hazard classes when it was admitted that the selection of the break point was arbitrary and not based on any data other than the knowledge of the commercial grades being shipped. The Logan Airport crash did influence the decision to split this material into corrosive grades and oxidizer grades. The current definition of an oxidizer material is qualitative. It is hoped that a notice with a quantitative definition will be published in the near future. To state that the break point between these two classes is settled would be to prejudge the definition which will be proposed for comment. The break point of 40% will

be re-evaluated when a quantitative definition of an oxidizer is adopted.

Nitrogen, cryogenic liquid. Corrections were made to this entry to permit the use of the current shipping name for this material, i.e., Nitrogen, pressurized liquid. The cryogenic was added as information and does not imply any intent to modify the current regulations for liquid nitrogen.

Organic phosphorus and Organic phosphorus compounds. For emergency response the Bureau believes that it is essential that these materials be identified as organic phosphates or organic phosphorus compounds, thus, these names have been declared to be technical names for the purposes of these regulations and the n.o.s. has been removed from the shipping names. Some inconsistencies exist in the descriptions of these entries, in the exceptions, and in the quantities permitted on passenger aircraft. An organic phosphorus or organic phosphate compound is not permitted an exception, however, liquid forms of these materials are permitted in 1 quart capacities and solid forms are permitted in 200 pound quantities per package on cargo aircraft. A mixture containing these poisons is permitted exceptions as noted in § 173.359 for liquid mixtures and in § 173.377 for solid mixtures. Corrections have been made to the hazardous material table to eliminate these inconsistencies.

ORM-Materials. The blank spaces left for maximum quantity permitted in one package aboard aircraft were not understood, therefore, the blank spaces have been filled with the entry "No Limit".

Oxygen. Objection was taken to the classification of oxygen as a nonflammable gas that requires an oxidizer or oxygen label. The case is similar to that of fluorine. Based on our current subdivisions of compressed gases, the material must be classed as a nonflammable gas, however, in order to convey the potential hazard and for improved stowage conditions, the label identifies this as an oxidizer. In the near future, an "oxidizer gas" class may be considered that will re-establish the continuity between the label and the class name.

Paraldehyde. This material is used as a drug, the identification of which on packages is forbidden by another agency. This entry is therefore deleted.

Pentachlorophenol. This entry is listed with quantity restrictions and packaging requirements for a liquid, yet the material is a solid. This entry was not carried in 49 CFR or 46 CFR, it has therefore been deleted because of the uncertainty of entry description.

Perchloroethylene. Based on petitions received, this name is added to the table as an alternate shipping name for tetrachloroethylene.

Phosphoric anhydride. Petitions were received objecting to the continued reference of § 173.188 as the packaging section after reclassification of this material to a corrosive material. The Bureau believes that reclassification of a material does not necessarily require major repackaging changes, assuming the inci-

dent history with the material has been satisfactory. This material was reclassified to better identify the potential hazard and to improve stowage requirements in mixed loads. Recodification of the entire code for hazardous materials will correct these entries.

Resin solution. The maximum quantity permitted aboard aircraft was omitted. This has been corrected with a maximum net quantity of 1 quart permitted on passenger aircraft and 55 gallons on cargo-only aircraft.

Silver nitrate. It was petitioned that the current entry be modified by the word solid, and that an additional entry for silver nitrate solutions (containing 38% or more silver nitrate) be added with the classification of corrosive. The additions to § 172.101 should be open to public review and thus this subject is deferred for later rulemaking.

Tank car, empty; tank portable; and tank truck. These entries have been modified to have the proper sections referenced in column 2. The section references in column 5 have been deleted.

Tertiary alcohol. It has been pointed out that this name, which in the past appeared in roman type, is now in italics. It was proposed to eliminate this as a proper shipping name because it does not identify any specific compound and is no improvement over "alcohol, n.o.s."

Tetrahydrobenzaldehyde. An error in the amount of material permitted on cargo aircraft has been corrected.

Toluene dithiocyanate. It was petitioned that the stowage aboard vessels be modified to conform with the current requirements of 46 CFR, i.e., to permit stowage under deck away from heat. This change has been made. An additional request to eliminate the requirement for an internal self-closing shut-off valve will be considered in a future rule making proceeding.

Toxaphene. Objection was taken to the entry as an equivalent of Camphene. The point is well taken and Toxaphene has been deleted from the table.

Trichloropropene. It was petitioned that this material be added as an entry in § 172.101 as a poison B liquid. No actual laboratory data of toxicity tests were submitted. Consideration of addition of the material is deferred until receipt of actual data.

Zinc phosphide. This material was added to the hazardous materials table and classed as a flammable solid based on its similarity to aluminum phosphide. Data has been submitted showing this material meets the definition of a poison B solid and that the rate of reaction with water is so slow as to result in no appreciable hazard from evolution of phosphine. The reaction for liberation of phosphine is from acid solution, thus, the general stowage rule for poisons is appropriate, i.e., do not stow poisons with acids. This entry has been deleted.

Sec. 172.200

For clarity, the Bureau has changed the titles of paragraphs (a) and (b) to Applicability and Exceptions respectively. Several petitioners recommended

elimination of the shipping paper exception in paragraph (b)(4) pertaining to limited quantities offered for transportation by rail under certain conditions since it was in direct conflict with other requirements. The comments have merit and the Bureau has deleted that paragraph since the provision is inconsistent with § 174.25.

Sec. 172.201

One petitioner requested clarification of the shipping paper requirements for packages assembled as provided by § 172.404(a) or (b). It is the position of the Bureau that, in either case, the provisions of § 172.201 apply. When materials covered by different descriptions are placed in the same package, each description and its corresponding class must be entered on the shipping paper. The Bureau believes that appropriate quantity entries can make the proper distinction to indicate the different materials that are in the same package. Paragraph (a)(1) sets forth the requirement for the placement of hazardous material descriptions on a shipping paper containing entries describing both hazardous and non-regulated materials. One petitioner did not understand these to be three alternative methods. Based on petitions received, the Bureau has made certain changes in this paragraph to allow greater flexibility while not diminishing the intent of the requirement that hazardous materials descriptions be clearly displayed by one of three methods.

A petitioner indicated the requirements for printing the shipping description § 172.201(a)(2), and the certification § 172.204(a) had not been proposed in the Notice of Proposed Rule Making under Docket No. HM-103 published January 24, 1974. That Notice contained both requirements. The shipping description requirement was stated in § 172.201(c) and the certification in § 172.204(d)(2). There is an insignificant change in the wording in Docket HM-112 § 172.201(a)(2) but not in the requirement. Based on comments received on the Notice, the clarifying words "printed (manually or mechanically)" were included for both the shipping description and the certification to indicate that hand printing was neither specified nor prohibited, and that preprinted shipping papers are not precluded.

Paragraph (a)(3) provides a specific prohibition against the use of a code or an abbreviation in the required shipping description. Three petitioners recommended continued use of codes in the shipping description. The preamble in Docket HM-112 cited the importance of the shipping description to emergency service personnel. The shipping paper, package marking, label and vehicle placard are all parts of the hazard communication system. Experience has shown that because of the circumstances during an incident involving hazardous materials in transportation, the shipping paper may be the only available source of information for identifying the hazards involved. The Bureau believes that the elements in the required shipping description for

hazardous materials must be readily identified under the conditions confronting those responding to an incident involving hazardous materials. To meet this requirement, the Bureau believes the shipping description must be clearly stated in accordance with one of the three options prescribed in § 172.201.

An authorization for entries to be on the shipping paper to provide additional information about the hazardous material being shipped is provided in paragraph (a)(4). With one exception, the additional information must be placed after the required shipping description. Exceptions in the description entry are provided by the Bureau as requested by a petitioner to permit identification of hazards a material may have in addition to its hazard class and to identify an IMCO hazard class for a material in an export or import shipment.

A petitioner indicated the provision in paragraph (b) for the shipping paper for a shipment by water to contain the name of the shipper was a general shipping paper entry and not an "additional description." The Bureau agrees and has relocated the paragraph to § 172.201(c), from § 172.203(d)(1)(iv).

Sec. 172.202

Petitions were received with recommendations that the "total quantity" entry in paragraph (a)(4) be established as net or gross weight depending on the Bureau's requirement. Column 6 in the Hazardous Materials Table § 172.101, has been changed to read "Maximum net quantity in one package." In most cases, the aircraft operator must know the net weight of hazardous materials because of the various limitations on the total quantity of hazardous materials aboard aircraft in certain locations. However, because of total weight limitations on aircraft, the gross weight may also be required. For export shipments by water, the requirement in § 172.203(f) is for gross weight of each "individual package" or "each type of package." Therefore, the requirement in § 172.202(a)(4) is in general terms and the specific requirements are established according to modes of transportation.

Sec. 172.203

The Bureau has revised this section to clarify the placement of additional entries relative to the basic description, which is the shipping name of a material and its class. Several petitioners indicated the requirement in paragraph 172.203(d) provides for the "No Placard Required" entry on the shipping paper for bulk solid corrosives under specified conditions. Several petitioners indicated this requirement conflicted with the provisions of § 173.245(b). The Bureau agrees and has deleted this requirement.

Paragraph (f) is redesignated paragraph (d), paragraph (e) makes provisions for entering the word "EMPTY" or "EMPTY: Last Contained -----" on the shipping paper except as required for tank cars. Petitioners identified conditions that would make compliance very difficult as the requirement was written. The Bureau agrees and has

changed the wording to delete the requirements contained in §§ 172.202(a)(4) and 172.202(c) when the "EMPTY" provision is applied.

A petitioner also recommended this requirement and that paragraph (g) be reworded for clarity to indicate that the proper shipping name of the hazardous material last transported be part of the "EMPTY" entry when that alternative is selected. The petition has merit and the Bureau has reworded paragraph (e) and paragraph (g) accordingly. The "EMPTY" entry for other than tank cars was left permissive whereas that in paragraph (g) for tank cars is required. The paragraph (g)(1)(ii) requirement was deleted as recommended by petitioners and paragraph (g)(1)(iii) was redesignated (g)(2). The redesignated paragraph (g)(2) sets forth the requirement for the shipping paper for certain rail cars to contain the word "EMPTY." A petitioner recommended the wording in this requirement and in § 174.25 be more similar to prevent confusion. The Bureau agrees and has reworded the paragraph.

The Bureau redesignated paragraph (g)(2) as (g)(3). A petitioner recommended a shorter entry be permitted as an alternative in redesignated paragraph (g)(3) for a shipping paper entry for certain tank cars without head shields. The Bureau believes the petition has merit and has made such a provision. The Bureau reworded paragraph (h) for clarity. For export shipments by water, paragraph (i)(2)(i) requires for a mixture described as n.o.s., the technical name of any hazardous material giving the material its hazardous properties. Several petitioners objected to "listing" the materials in a n.o.s. mixture giving the material its hazardous properties. The Bureau has, therefore, changed the word "listed" to "identified." Also, as requested by a petitioner, the Bureau changed the phrase to "name of any hazardous material" for clarification and made the requirement part of paragraph (i)(2).

Sec. 172.204

The requirements and exception for certification on the shipping paper are in paragraph (a). A petitioner indicated an improper reference to § 172.200(b) in this paragraph. The Bureau agrees and deleted the erroneous reference. Another petitioner questioned the lack of a certification for materials classed as ORM-D. The Bureau considers the marking specified in § 172.316(c) to be acceptable for that purpose when no shipping paper is required. Requirements for submitting two copies of the certification to the aircraft operator for each shipment offered for air transportation are set forth in paragraph (c)(2). A petitioner indicated it was unclear as to whether two copies of the certification are required for a highway carrier transporting a shipment to be transported by air. Two copies of the certification must be given an aircraft operator before a hazardous material may be accepted as specified in § 175.30 of this subchapter. In many cases, a motor carrier performing only

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a carrier service would not be the person offering this material for carriage aboard aircraft and, therefore, would not be required to carry or provide two copies of the certificate. In certain cases, the carrier, who may be a private carrier or freight forwarder, is also the person offering the material to the aircraft operator. He must provide two copies at the time he offers the material for transportation aboard aircraft. The Bureau reworded the requirement to more clearly indicate the offering is made to "an air carrier."

The requirement in paragraph (c) (3) is for a certification to indicate that the air shipment is within the limitations prescribed for passenger aircraft or cargo-only aircraft. A petitioner asked for clarification of this requirement. This is a certification by the person offering a material for transportation aboard passenger or cargo-only aircraft that it is within the specified limitation for one or the other. When a package authorized for either type of aircraft is loaded aboard a cargo-only aircraft, a passenger aircraft certification indicates that it may be loaded in an inaccessible cargo pit or bin, subject to the 50-pound limitation. Therefore, the nonapplicable entry must be deleted by being crossed out or by another means.

A petitioner indicated punctuation errors in paragraph (c) (4) that changed the meaning of the paragraph. The Bureau corrected the errors and reworded the paragraph for clarity.

The requirement that the signature to the certification must be legible whether signed manually, by typewriter, or other mechanical means is set forth in paragraph (d). Petitioners have questioned the requirement that the signature be legible, as well as whether preprinted signatures are acceptable. Legibility is necessary to enable the responsible person to be identified. The means of affixing a signature under this section is not significant so long as it is legible. However, a preprinted signature is deficient for the purposes of this section, because a preprinted signature is made before the conditions and acts to which that signature and certification apply have come into existence. One cannot prospectively certify something. Logically, the act of certification, the signature, must follow, rather than precede, the existence of the subject of the certification.

Sec. 172.300

A petitioner questioned whether this general marking requirement was in the Notice. It was proposed in Docket HM-103, January 24, 1974 (39 FR 3022).

Another petitioner indicated an error in exception references. The Bureau agrees and has reworded the section to correct the error. Based on a petition, the Bureau added an exception to this requirement for portable tanks, cargo tanks and tank cars.

Sec. 172.302

Paragraph (b) of this section pertaining to export shipments by water has

been reworded by the Bureau as recommended by a petitioner so as to be in agreement with the wording of § 172.203 (h) (2) (i).

Sec. 172.304

A petitioner recommended that a portion of the preamble language on marking specification from § 172.304 in Docket HM-112 be included in the rulemaking. The Bureau believes that the following quote from that preamble is informative and is not regulatory in nature, "It is the Bureau's position that a product label that contains precautionary information consistent with the intent of the DOT regulations would not be precluded by this restriction."

Sec. 172.306

Three petitioners requested changes in the requirements for marking the consignee's name and address as provided by this section and two petitioners recommended an alternative to the "name and address of the consignee." The Bureau considers the petition for the alternative marking to have merit and has provided for marking the "name and address of the consignee or consignor."

One petitioner recommended that a package containing only an ORM-D be exempted from this marking requirement. The Bureau takes the position that for other than the exceptions provided in this section, each package, including one containing an ORM-D, must include the name and address of the consignee or consignor to facilitate routing of astray packages. One petitioner requested paragraph (a) (2) be changed to read "... freight, container load, or the entire contents, ..." The Bureau does not agree with this recommendation because, as written by the Bureau, it is a two part condition, not an alternative.

Sec. 172.312

Two petitioners indicated the title of the section identified "liquid hazardous materials", yet reference to a liquid was omitted from the text. Also, a petitioner recommended that the term "liquefied compressed gases" should be included in the marking exceptions. The Bureau agrees and has made these changes.

Sec. 172.316

The Bureau changed the heading of § 172.316 from "containers" to "packagings" for clarity. A petitioner asked clarification of paragraph (a) on marking packages "ORM-D-AIR" whether or not they were intended for air shipment. Another petitioner asked that "labeled" be deleted and "described" added to the ORM certification for correctness. The ORM-D-AIR marking certifies the package is "prepared for air shipment and packaged in accordance with the provisions of § 173.6 of this subchapter," and it does not necessarily mean that the package is intended for air shipment. The Bureau agrees with the second petitioner and has added the word "Described" in the ORM certification requirement in § 172.316(c) but did not delete the word "labeled" because the MAGNETIZED MATERIAL label could

be required on an ORM-D package. The Bureau also corrected the reference in § 172.316(c) to correctly read § 172.204. A petitioner asked for clarification of the ORM-D marking that could be put on a tag. Section 172.316(b) permits the marking to be attached with a tag if it cannot be affixed to the surface of the package. The marking is "Consumer Commodity, ORM-D (or ORM-D-AIR)" with the hazard class within a rectangle of specified minimum size in relationship to the class designation. The Bureau reworded § 172.316(b) to clarify this authorization.

Sec. 172.326

Several petitioners recommended that the portable tank markings be located on two opposite sides. The Bureau has changed the requirement accordingly because markings on heads can not always be made and be seen. A petitioner recommended wording to require markings to properly identify the hazardous materials contents of a portable tank, cargo tank, or tank car, or that the markings be removed if other than a hazardous material is to be shipped. The Bureau agrees and in the interest of proper identification and safety has reworded §§ 172.326(b), 172.328(d), and 172.330(d).

Sec. 172.328

A petitioner requested clarification of the requirement in § 172.328(a) for marking a cargo tank transporting a hazardous material, other than a compressed gas, in accordance with Part 173. This is a general requirement to accommodate future entries in Part 173 that may require the identification of particular materials. The requirements for marking cargo tanks transporting compressed gases was previously specified in § 177.823, and proposed in § 172.308 at 39 FR 3170. It is the Bureau's position that this provision must be retained. A petitioner recommended § 172.328(d) be reworded for clarity. This was done as indicated for the change to § 172.326. Two petitioners recommended standardizing of "appropriate common name" in § 172.328(b) (2) and "authorized common name" used elsewhere. While the Bureau agrees that the wording should be standardized, such a change would be beyond the scope of this docket since there is no such restriction pertaining to cargo tanks transporting compressed gases.

Sec. 172.330

For clarity, the Bureau reworded § 172.330(a). Petitioners requested clarification of "authorized common name," and this was changed by the Bureau to "common name authorized in this subchapter for the material." Paragraphs (b) and (c) were changed as recommended by petitioners to identify "tank cars" in the text. Petitions indicated an editorial error in paragraph (a), so the Bureau added the word "or" to correct it. Paragraph (d) was rewritten by the Bureau to be the same as §§ 172.326(b) and 172.328(d).

SEC. 172.400

Prescribes general labeling requirements and exceptions thereto. The Bureau has rewritten paragraph (a) for clarity and to eliminate repetition.

A petitioner recommended "Part 173 of" be deleted in § 172.400(b) (1) so label exceptions authorized in other Parts may be permitted. The Bureau agrees and has reworded the paragraph.

A petitioner recommended the labeling of samples be specified in this section. The Bureau does not agree and believes the provisions of §§ 172.401(a) and 172.401(d) are sufficient since an exception to a provision is authorized. A petitioner identified an error in a reference in paragraph (b) (2) (iii) which the Bureau corrected. Paragraph (b) (6) has been amended to make clear the fact that portable tanks having a capacity of less than 1,000 gallons, which are placarded in accordance with § 172.514, need not be labeled. This exception is already stated in § 172.406, which specifies label placement. It is appropriate to explicitly state this exception with other labeling exception in § 172.400(b). Several petitioners suggested cargo tanks and tank cars be excepted from the general labeling requirements because the definition of packaging includes them. The Bureau agrees and renumbered § 172.400(b) (11) as § 172.400(c), and placed the cargo tank and tank car exception in the new § 172.400(b) (11).

Sec. 172.401

Sets forth the prohibited labeling. A petitioner recommended paragraphs (a) and (b) of § 172.401 be changed to read "... and no carrier may accept or transport ..." This change was not proposed in the notice and is beyond the scope of this rule making.

Sec. 172.402

Restates the additional labeling requirements consistent with the proposals made under Docket HM-103. Paragraph (a) in § 172.402 was incomplete and has been rewritten by the Bureau. Several petitioners indicated a conflict between the provisions of § 172.402(a) (2) and § 172.100(e). The Bureau agrees and the conflict has been resolved by a rewrite of these sections. Also, as recommended by several petitioners, the Bureau made provisions in § 172.402(a) (2) for multiple labeling of a Poison B material that also meets the definition of a flammable liquid. Paragraphs (a) (3) and (a) (4) also provide for multiple labeling. The additional hazard must be identified with a label if the shipper is aware of the hazard and if the provisions in this section require multiple labeling for that material. Several petitioners recommended Poison B be identified with a label whenever Poison B was an additional hazard of a material. This was not proposed in the notice for all combinations, such as those involving corrosives and is beyond the scope of this rule making.

A petitioner misunderstood the requirements of § 172.402(c). The DANGEROUS WHEN WET label is applied to

a package only when that label is required by § 172.101 for a Flammable solid or as provided in § 172.402(a) (4). One petitioner recommended an editorial change to § 172.402(d) to change "and" to "or." The Bureau has revised the paragraph for clarity. Two petitioners recommended the Bureau make provisions for the use of the DANGEROUS WHEN WET, SPONTANEOUSLY COMBUSTIBLE and IRRITANT labels when required by the regulations of another country. The Bureau believes that sufficient provisions have been made concerning the use of these labels and in response to the petitioner who recommended that the POISON label be permitted in place of the ETIOLOGIC AGENT label, the POISON label is authorized in addition to the ETIOLOGIC AGENT label which is required on all packages of etiologic agents in the United States.

As recommended by a petitioner, the Bureau has added § 172.444 as a reference in paragraph (f).

Sec. 172.403

Sets forth Radioactive material labeling requirements. The Bureau added § 172.403(g) from 49 CFR 173.416(d). This was omitted from HM-112 in error.

Sec. 172.404

Provides for labeling mixed or consolidated packagings. A petitioner indicated a conflict between this section and the definition of "packing" in § 171.8. The Bureau finds no conflict.

Sec. 172.405

Provides for the OXYGEN label to be used in place of the OXIDIZER label and for the CHLORINE label to be used on a package containing CHLORINE. A petitioner recommended that authorized use of the word OXYGEN on a label be withdrawn. However, since this material is shipped so frequently and in high volumes, the label modification is justified on a permissive basis.

Sec. 172.406

Provides general label placement requirements. A petitioner recommended the requirement in § 172.406(a) be changed to have the labels affixed near the "marked proper shipping name" instead of "marked name of contents." The Bureau agrees and has changed the paragraph accordingly. One petitioner indicated that multiple labels wired on as tags as provided in 172.406(b) may not be "displayed next to each other." The Bureau agrees and has provided for the labels to be "affixed next to each other" in 172.406(c). Several petitioners objected to the requirements in Part 172 for marking, labeling and placarding portable tanks having a rated capacity of less than 1,000 gallons. The Bureau agrees and has made provisions in 172.406(e) (4) for labeling these portable tanks unless they are placarded in accordance with § 172.514(a).

Sec. 172.407

Sets forth label specifications. A petitioner recommended colors that are not

within the allowable tolerances be authorized for labels. The preamble to this section in the amendment at page 15980 covered the requirement for the label color standards. To allow variances in the colors so they do not come within the tolerances would downgrade the effectiveness of the adopted color standards.

Because of the increase in both the amount of hazardous materials and the severity of the hazards of the materials in transportation, the hazard warning must be effective. More people are becoming involved in the handling of the materials and in actions involving hazardous materials incidents in transportation in terminals or on loading docks. Multiple labeling has been increased; much of it in response to petitions. Packaging, marking, shipping paper entries, labeling, and placarding have been upgraded, and coordinated as a system to improve safety in the transportation and handling of hazardous materials. The color tolerance standards for labels and placards are a necessary part of the overall upgrading of the system.

The Bureau does not determine the type of material to be used to produce the required color, and essentially the thrust of the petition is for the Bureau to make such a determination.

Sec. 172.426

As required by a petitioner, the Bureau has added to paragraph (a) the OXYGEN label.

Sec. 172.432

The Bureau has authorized for an export shipment the use of the IRRITANT label prescribed for export shipments as a replacement label for the one prescribed in paragraph (a).

Sec. 172.500

A petitioner indicated this section did not specifically except Limited Quantities from the placarding requirements. Each authorization for a Limited Quantity contains the packaging, shipping paper, and labeling requirements for that material, such as in § 173.118(a). The Bureau, therefore, has indicated in § 172.500(b) the exception to the placarding requirements. Another petitioner misunderstood the basic reason for having the placards appear the same for all modes of transportation. The placard is one element of the hazard communication system and must mean the same thing to emergency response personnel or others responding to an emergency involving hazardous materials in transportation. The Bureau recognizes that during the changeover period to the square-on-point placards, there will be a mix of the two placarding systems in use. Ideally the change-over would be accomplished immediately, however, realistically it must be accomplished over a period of time sufficient to acquire and install mounting devices and to obtain placard stocks.

Sec. 172.502

A petitioner interpreted the placarding prohibitions in this section as preventing a shipper from affixing hazard identifi-

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cation required by another Federal agency. The specific prohibition is to prevent the use or proliferation of any warning media that could be mistaken for or confused with the hazardous materials placards prescribed in this subpart. Warning signs of other shapes and designs are not prohibited by this subpart.

Sec. 172.504

To the maximum extent possible, the Bureau made the placarding requirements essentially the same for all modes of transportation. Several petitioners recommended the DANGEROUS placard be permitted for all partial loads exceeding 1,000 pounds. However, the hazards of certain materials, regardless of their quantity, must be identified as to the kind of hazard presented. These materials are covered by Table 1. The hazards of other materials, to the maximum extent determined practicable, must be identified in aggregated amounts. At the time of the amendment, the Bureau decided that 5000 pounds or more of material or materials of one class, loaded in a vehicle at one loading facility, must be specifically identified by a placard for that class. On the other hand, it was not considered practicable to impose such a request relative to so-called peddle operations when 5000 pounds or more could be aggregated as a result of pick-ups at many different locations.

A petitioner recommended § 172.504(a) be changed for clarity to indicate the requirement for placarding on each end and each side. The Bureau agrees and has made this change.

A petitioner recommended the placard in footnote 2 to Table 1 be identified. The petition has merit and the Bureau has changed the footnote. Several petitioners requested the wording in footnote 3 to Table 1 be corrected to read " * * * more than 110 gallons, * * * ". The Bureau agrees and has made this correction. The Bureau added the placarding requirement for Fluorine to Table 2 to make the requirement consistent with § 174.25 (a). Petitioners recommended footnotes 4 and 5 to Table 2 be changed to indicate applicability to water transportation requirements. The Bureau agrees and has added the water transportation requirements. The Bureau added footnote 7 to Table 2 to clarify the placarding requirements for Chlorine. The Bureau has restated § 172.504(b) for clarity and § 172.504(c) to preclude application of the provision to transportation by air or water. A petitioner recommended that all placarding be based on the class of the hazardous material. However, placarding must be kept to a minimum consistent with provisions of the effective impact of placarding. In order to provide sufficient warning of its hazards in transportation, Chlorine is required to be placarded by name rather than by its class when in packagings having capacities greater than 110 gallons.

Sec. 172.506

Several petitions were received for clarification of which placards the shipper was to make available to a motor

carrier. The Bureau has reworded § 172.506(a) to indicate that the shipper is required to provide placards only for the material he offers for transportation. An air carrier asked for clarification of the source of placards for a freight container that could have less than 1,000 pounds of Table 2 materials in a highway movement to the air terminal. This requirement is covered in § 172.512(a) and the freight container must be placarded for the highway movement.

Several petitioners asked the distinction between the requirements of §§ 172.506 and 172.514. The Bureau's position is that there is no difference in concept between the placarding requirements in §§ 172.512 and 172.514 and the marking requirement in § 172.300. The person offering the packaged hazardous material for transportation is responsible for accomplishing the specified requirements. As these particular sections are concerned, he is offering a freight container or cargo tank containing a hazardous material for transportation rather than offering a hazardous material for transportation in a freight container or cargo tank.

Therefore, all the specified requirements are to be accomplished prior to being offered to a carrier for transportation.

Sec. 172.510

A petitioner identified an error in the vapor pressure in § 172.510(b). This has been corrected by the Bureau. A petitioner recommended a tank car that had contained a Combustible liquid be excepted from the EMPTY placarding requirements because of car placement. The recommendation has merit and the Bureau has made the change in § 172.510 (c) for such provisions. This is consistent with the table in § 174.25(a)(3).

Sec. 172.512

A petitioner recommended § 172.512 (a) be changed to identify § 172.504 as the placarding requirement to be consistent with § 172.514. The Bureau agrees and has made the change. Omissions in the placarding table for the freight container were indicated by a petitioner. There were two entries for highway and water and none for highway, air, and water. There was none for air and water only. The Bureau has made the corrections.

Several petitions were received concerning the difficulty in understanding the negative footnotes to Freight Container Placarding Table. These petitions have merit and the Bureau has changed the footnotes to include the placarding of a freight container with less than 1,000 pounds of Table 2 material and when transported by air or water immediately before highway or rail delivery to the consignee. Several petitioners recommended § 172.512(c) be corrected by adding a comma after ORM-D. The Bureau agrees and has made the correction.

Sec. 172.514

Petitioners requested the placarding requirements for portable tanks be clarified to indicate a portable tank having a

rated capacity of less than 1,000 gallons could be placarded or labeled. This clarification has been provided by the Bureau.

Sec. 172.519

In response to petitions received, the Bureau has amended the placard specifications to permit the UN class numbers on the NON-FLAMMABLE GAS, FLAMMABLE GAS and FLAMMABLE placards to be white and to permit a solid or dotted line outer border when needed to indicate the full size of a placard when it is not on a contrasting background.

SECS. 172.521 AND 172.525

Several petitioners identified editorial errors in the placard specifications which were corrected by the Bureau. Also, in § 172.525 the Bureau added provisions for use of the FLAMMABLE SOLID EMPTY placard which was omitted in error from HM-112 but required for a material like Potassium, metal.

One petitioner took issue with the display on the rear of motor vehicles with roll-up doors and requested that van operators be allowed the continued use of rectangular placards until manufacturers of roll-up doors can establish adequate lead time to make necessary modifications to their products to accommodate the newly required placards. The petition is denied. The Bureau believes that the trucking industry and its suppliers will be able to develop an appropriate solution to the stated problem in the same manner it has been able to overcome much more significant problems in the past, and it is believed that an appropriate means of display can and will be developed that will not make changes to roll-up doors necessary.

Sec. 172.548

A petitioner recommended the symbol on the FLAMMABLE SOLID placard to warn about the use of water be changed to an "X". The Bureau does not agree since the emergency service personnel need readily understood warnings for guidance in the protection of life or property.

APPENDIX B TO PART 172

Several errors and omissions in the placard specifications were identified by petitioners. These were corrected by the Bureau.

PART 173

Sec. 173.2

Paragraph (a) has been amended to clarify the application of this paragraph and eliminate any conflict with paragraph (b). Several petitioners stated that the order of hazards listed in this section should be revised. The comments were primarily addressed to dividing flammable liquids into two categories (liquids with flash points of below 73° F. and liquids with flash points of 73° F. to but not including 100° F.) and that materials classed as Poison B should rank higher in the order of hazards than certain other classes of hazards. Relative to the division of the flammable liquid hazard category, the Bureau considered

this change. However, the flammability of materials continues to remain one of the major hazards in transportation and restrictions are necessary on these types of materials in all modes of transportation. Certain exceptions are provided for materials with high flash points in that larger capacities of materials may be shipped as a limited quantity and non-specification packagings may be used when volumes of 110 gallons or less are shipped. For the present time the Bureau intends to maintain the order of hazards established in this section as it believes that a division in the flammable liquid category will detract from the importance of communicating this hazard. Petitioners who commented on the section usually stated that materials classed as Poison B should rank higher in the order of hazards than certain other classes of hazards. The Bureau believes that Poison B materials present a hazard which must be communicated and such material must be transported as safely as possible. Under these regulations, every material meeting the Poison definition is required to be marked and labeled. However, more substantial packagings are required for classes higher in the order than Poison B. Changing the position of the latter would require substantial packaging changes which at present have not been evaluated.

SEC. 173.3

A few petitioners requested that the provisions which permit a representative of a carrier to inspect methods of container manufacture be revised to exclude such an inspection. This petitioner also stated that such a provision is not in the current regulations and was not proposed in the notice to this docket. The Bureau agrees and has amended paragraph (a) to only permit a representative of the Department to inspect container manufacturers.

SEC. 173.28

Clarification of paragraphs (i) and (m) of this section were made by substituting the term "oxidizers" for "oxidizing materials" because of the change in hazard class terminology. Also, these paragraphs have been amended by referencing "organic peroxides" since a hazard class category has been established for such materials. In paragraph (i) this reference will prohibit the use of containers marked "NRC" from being reused for organic peroxides. In paragraph (m) the reference will authorize certain DOT containers, if reconditioned, to be used for organic peroxides. The rationale for this change is based on the fact that organic peroxides were formerly classed as oxidizing materials or flammable solids and were permitted in or prohibited from such containers as members of that class.

SEC. 173.20

Editorial changes have been made to paragraph (f) to correct references to labeling requirements which has been transferred from Part 173 to sections in Part 172. In addition, paragraph (g) has

been amended to permit heater coil pipes on empty tank car to remain open during transportation as they present no safety problem.

SEC. 173.116

A few petitioners questioned why the outage requirements were only based on capacities of 110 gallons or less when portable tanks exceed this capacity. This outage restriction to packagings of 110 gallons or less resulted from comments to the notice whereby it was demonstrated to be unduly restrictive to apply to insulated tanks and because of the heat sink capacities of large size containers. On reconsideration, the Bureau agreed with the comments that the outage requirements were unduly restrictive and limited the requirements to packagings of 110 gallons or less.

SEC. 173.118

Editorial changes have been made to paragraph (a) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SEC. 173.119

A number of petitioners requested that paragraph (m) be withdrawn since the requirements were not submitted for public comment. The Bureau disagrees and the requirements will remain since they were published on April 24, 1974 in Notice 74-7 (39 FR 14519) under this docket.

SEC. 173.128

Several petitioners requested that exceptions from all of the requirements relating to packaging, marking, and labeling be granted for paint and related materials packed in one gallon or less capacity inside containers in strong outside packaging. The Bureau believes that the requirements for marking and labeling are necessary for hazard communication, especially since these materials account for 20 percent of all hazardous incident reports received in 5 years of incident reporting. Therefore, the Bureau has maintained the marking and labeling requirements for these materials.

SEC. 173.130

Editorial changes have been made in this section to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SEC. 173.147

Editorial changes have been made in paragraph (b) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SEC. 173.151a

Several petitioners pointed out a conflict that exists between the definition of an organic peroxide and the Hazardous Materials Table (§ 172.101). The definition states a material meeting the definition must be classed as an organic peroxide while the Table has an entry of organic peroxide, n.o.s. with a flammable liquid hazard class. The definition of an organic peroxide has been amended to

clarify the requirements to follow when a material also meets the definition of a flammable liquid.

The regulations have recognized the flammability hazard of materials, which are also organic peroxides, by reference to the packaging requirements of § 173.119(m). This section has been amended to recognize the explosive characteristics of a material that meets the organic peroxide definition and provides for an exception from regulation for organic peroxides based on limited hazard properties.

SEC. 173.153

Editorial changes have been made in paragraphs (a) and (b) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SEC. 173.154

Editorial changes have been made to the heading and paragraph (a) to cover the packaging requirements for organic peroxide solids that were omitted from the amendment.

SEC. 173.162

Editorial changes have been made in paragraph (a) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SEC. 173.176

Paragraph (g) has been amended to clarify the fact that certain type of matches are not subject to the regulations when packed with no other articles.

Editorial changes have been made in paragraph (h) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SECS. 173.180 and 173.181

These sections are deleted because the requirements have been incorporated in § 173.177 or that the film is no longer being shipped.

SEC. 173.182

A petitioner indicated that "Note 1" following paragraph (a)(1) had been eliminated without any explanation. The definition for nitro carbo nitrate contained in this note was inadvertently deleted and has been replaced.

SEC. 173.190

Paragraph (b)(3) has been amended to correct an error with reference to the type of empty placard to be shown on a tank car. Phosphorus is classed as a flammable solid, therefore the placard has been corrected to read "EMPTY—FLAMMABLE SOLID".

SEC. 173.206

Editorial changes have been made in paragraph (d) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SEC. 173.217

Editorial changes in the heading and paragraph (a) have been made to correct

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the reference from a compound to a mixture. Also, editorial changes have been made in paragraph (b) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SEC. 173.220

Editorial changes have been made in paragraphs (a)(2) and (b)(1) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SEC. 173.223

Editorial changes have been made in paragraph (b) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SEC. 173.225

Editorial change has been made in paragraph (a) to add the reference to phosphorus pentasulfide which was inadvertently omitted in the amendment.

SEC. 173.226

Editorial changes have been made in paragraph (b) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SEC. 173.229

Editorial changes have been made in paragraph (b) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SEC. 173.232

Editorial changes have been made in paragraph (b) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations. Also, paragraph (c) has been amended to reflect the packagings which are currently being used in commerce without any safety problems and the wooden barrel or keg packaging has been deleted from this paragraph as being obsolete.

Several petitioners requested that portable steel tanks, not over 5,000 pounds gross weight and bulk shipments in rail cars and cargo tanks be authorized for transporting this material. This request is based on excellent shipping experience accumulated over a number of years. The Bureau agrees with these petitioners and this section has been amended to provide for the use of portable steel tanks and bulk shipments in rail cars and cargo tanks.

SEC. 173.240

A petitioner stated that the definition of a corrosive material has been amended by the procedure prescribed under Appendix A of Part 173. The procedure set out in Appendix A is the same procedure that was previously referenced by § 173.240 as found in Title 21 CFR, and presently used by the Consumer Product Safety Commission. That procedure has since been recodified to 16 CFR 1500.41. Rather than correct the reference to Title 21, the Bureau has incorporated

the procedure in Appendix A. The procedure for determining whether a material is corrosive to skin is itself not changed.

SEC. 173.241

Some petitioners questioned why the outage requirements were based on capacities of 110 gallons or less. In the notice, these outage requirements were not restricted to any capacity, however, comments demonstrated that because of insulated tanks and heat sink capacities of large volumes, capacity restrictions should be shown.

SEC. 173.242

A petitioner requested the Bureau to amend this section to permit the shipment of corrosive liquids in the same package with nonhazardous materials. This request is not within the scope of this rule making but will be handled under Docket HM-121.

SEC. 173.244

Editorial changes have been made in paragraph (a) to continue the placarding exceptions for shipments of limited quantities under the current regulations. A petitioner questioned the need for marking of limited quantities of materials that would be described as a "Corrosive material, n.o.s.". The marking requirement along with the description on the shipping papers assists in providing the proper information to those emergency response personnel who need to know in case of an incident.

SEC. 173.245

Paragraph (b) has been amended to indicate that there are certain exceptions for materials corrosive and these exceptions are authorized if proper shipping paper entries are completed.

SEC. 173.249

A petitioner requested that certain alkaline corrosive liquids be permitted to be shipped in capacities of 16 ounces under the provisions of paragraph (c). This quantity increase to 16 ounces is already permitted for certain packagings in § 173.244. However, not all types of packagings are authorized to contain 16 ounces. This request is denied because it is not within the scope of the rule making. Editorial changes have been made in paragraph (c) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SEC. 173.261

Editorial changes have been made in paragraph (b) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SEC. 173.262

The Bureau was requested by a petitioner to authorize the use of a packaging presently covered by an exemption. This change was not proposed and therefore cannot be made in this amendment because it is not within the scope of this rulemaking.

SEC. 173.263

Editorial changes have been made in paragraph (b)(2) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SEC. 173.266

Editorial changes have been made in this section and paragraph (b) is reinserted in its entirety since the amendment failed to indicate that the packagings authorized in this paragraph were being retained.

SEC. 173.272

Editorial changes have been made in paragraph (b) to continue the placarding exceptions for shipments of limited quantities under current regulations.

SEC. 173.277

Editorial changes have been made in paragraphs (d) and (e) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SEC. 173.279

Editorial changes have been made in paragraph (b) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SEC. 173.286

Editorial changes have been made in paragraph (b) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SEC. 173.306

Editorial changes have been made in paragraphs (a), (b), (c), (e) and (f)(2) to continue the placarding exceptions for shipments of limited quantities authorized under current regulations.

SEC. 173.308

Several petitioners requested that cigarette lighters charged with butane or another flammable gas fuel be provided certain exceptions from the regulations when shipped in small quantities and transported by motor vehicle. In the current regulations such cigarette lighters are prohibited from being shipped in limited quantities or as a consumer commodity. The reason for these prohibitions are that these lighters leak flammable gas in very small quantities which can create a potential hazardous condition during transportation. The requests for reconsideration are directed toward relief from the full scope of the regulations, except marking, when shipped by motor vehicle in small quantities in local deliveries from distribution warehouses to retail sale outlets. The Bureau appreciates the concern of the petitioners but feels that certain restrictions must be imposed and maintained to protect against a possible hazardous incident. However, in consideration of the conservative means in which approvals are issued under the provisions of § 173.21 (d), § 173.308(b) has been added to make

a special provision for a limited number of cigarette lighters when transported by motor vehicle.

SEC. 173.326

A petitioner stated that certain Poison A materials shown in paragraph (a) were no longer manufactured and shipped. The Bureau has amended the paragraph in accordance with the comments.

SEC. 173.327

Several petitioners requested that paragraph (e) be amended for clarification purposes. The Bureau agrees and has amended this paragraph to clarify the outage requirements for Poison A materials.

SEC. 173.344

Editorial changes have been made to correct the inadvertent omission of the term "be" in paragraph (b) (1) that requires packagings not to be liquid full at 130° F.

SEC. 173.345

A petitioner questioned the need for marking and labeling materials classed as poisons. The Bureau believes it is necessary to mark and label such materials in order to communicate their hazards and in order to assure that proper precautions will be taken concerning their handling. Also, both requirements assist in preventing the coloadings of poisons with foodstuffs.

SEC. 173.353

This section has been amended to remove any reference to methyl bromide and nonflammable, nonliquefied compressed gas mixtures, liquid, which has been transferred to § 173.353a.

SEC. 173.353a

A new section setting forth the requirements covering methyl bromide and nonflammable, nonliquefied compressed gas mixtures, liquid. These requirements were formerly found in § 173.353.

SEC. 173.358

Editorial changes have been made to the heading and paragraph (a) to include the term "organic phosphate compound," which was inadvertently omitted in the amendment. Also, reference to "n.o.s." has been deleted wherever it appears in this section in order to authorize these materials as specific descriptions. Also, paragraphs (a) (1) through (a) (12) have been restated in their entirety since the amendment failed to indicate that the packagings authorized in this paragraph were being retained.

SEC. 173.359

This section has been amended to delete the references to "n.o.s." wherever it appears in order to authorize these materials as specific descriptions.

SEC. 173.364

Paragraph (a) (3) has been amended to correct the reference from "exemption" to "exception" and to include "or-

ganic phosphorus compound mixtures," which was inadvertently omitted in the amendment. Also, the reference to "n.o.s." has been deleted wherever it appears in the section in order to authorize these materials as specific descriptions.

A petitioner stated that poison solids when shipped in the same quantities as provided for a consumer commodity but not meeting such a definition should not be required to have a label on the outside package. The Bureau disagrees with this petitioner because, by definition, a material described as a consumer commodity is or may be available for consumer use from retail sales outlets. Such materials are subject to regulations of government agencies which in many instances prescribe limits on the hazards of materials available to consumers.

SEC. 173.368

A petitioner stated that the use of certain motor vehicles was prohibited in transporting materials covered under this section because reference to such vehicles was omitted. The Bureau recognizes that such a reference was inadvertently left out and has amended the section to reinstate the use of such transport vehicles.

SEC. 173.377

Editorial changes have been made to correct the word, "chapter" to "subchapter" in paragraphs (g) (1), (h) (1) and (i) (1). Also, the reference to "n.o.s." has been deleted wherever it appears in the section in order to authorize these materials as specific descriptions.

SEC. 173.391

This section was not proposed to be changed in the notice to this docket, however, certain editorial changes are necessary in the heading and paragraphs (a), (b), (c) and (d) to be consistent with the regulations applicable to shipments of limited quantities in the amendment.

SEC. 173.393(p)

This paragraph is being added to the part of the regulations applicable to the shipment of radioactive materials to make it clear that shippers may not offer radioactive materials for transportation aboard passenger-carrying aircraft unless such materials are intended for use in, or incident to, research, or medical diagnosis or treatment consistent with the provisions of Section 108 of Public Law 93-633.

SEC. 173.426

Editorial change has been made to paragraph (a) to correct the word "pressure" to "presence".

SEC. 173.610

Camphene was shown in the Hazardous Materials Table, in both the notice and the amendment, as an ORM-A material, but § 173.948 showed Camphene as an ORM-C material. § 173.948 has been moved and redesignated § 173.610, to correct this error and to clarify the proper classification of Camphene as an ORM-A material.

SEC. 173.620

A petitioner requested that DOT-51 portable tanks should be authorized for shipments of ethylene dibromide since such tanks are permitted under the current regulations for a material having a higher hazard of which ethylene dibromide is a component. Also, 46 CFR authorized the use of "any container for poison Class B" and since portable tanks were used successfully their continued use should be authorized. The Bureau agrees and has amended the section to provide for the use of such a portable tank.

SEC. 173.650

A few petitioners stated that hexachloroethane was not a liquid material and therefore the referenced packaging sections were incorrect. The Bureau agrees and has amended paragraph (a) (1) to reflect the proper packaging sections.

SEC. 173.948

The provisions formerly appearing in this section for Camphene have been transferred to § 173.610 and reference to this section is being deleted.

SEC. 173.1200

A number of petitioners requested the Bureau to consider amending paragraph (a) (4) to authorize the shipment of charcoal briquettes in quantities not exceeding 65 pounds per package. Under the present regulations, charcoal may be shipped as a consumer commodity and classed as an ORM-D if packaged in accordance with the provisions covering materials classed as a flammable solid. These provisions limit the inside container to a net weight of 1 pound or less and the outside package to a net weight of 25 pounds. This appears to be adequate for most entries in § 173.162. However, charcoal briquettes are marketed in packagings of a different size and it would be unduly restrictive to require this commodity to be packaged in one pound bags since it poses a limited hazard and has enjoyed an excellent transportation record. In consideration of this fact, paragraph (a) (4) has been amended to provide for the shipment of charcoal briquettes in bags having a net weight of 65 pounds.

Several petitioners requested the incorporation of fire-extinguishers into the class of ORM-D since certain size fire-extinguishers may be purchased in retail outlets for consumer use. The Bureau has reviewed these petitions and agrees that there are many commodities which are available through retail outlets for consumer use that are not authorized to be shipped as consumer commodities by these regulations. While not covered by this amendment, the Bureau will consider fire extinguishers, as well as other products, for inclusion in the ORM-D class in the future, not necessarily as consumer commodities as provided in § 173.1200, but as materials that should be otherwise included in that class because of their limited hazard.

A few petitioners indicated to the Bureau that certain cleaning compounds

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which meet the definition of a corrosive material are prohibited from consideration as a consumer commodity because of the size container in which they are marketed. It has been pointed out by a petitioner that of the cleaning compounds available to the consumer only those containing corrosive materials of 10 per cent concentration are seeking relief from the present packaging capacity restriction of 1 pint. The Bureau, in Docket No. HM-57 covering corrosive materials, proposed that corrosive materials could be shipped in containers having capacities of 1 quart and be excepted from certain regulations during transportation. Objections were received to this increase in capacity from the 1 pint limitation based on the fact that many highly corrosive materials would be permitted in larger capacities without being evaluated thereby reducing safety by exposing the general public to a greater hazard risk. However, cleaning compounds containing dilute solutions of corrosives are available to the consumer in retail sales outlets.

There has been an excellent performance record established in commercial transportation involving the 1 quart capacity containers. Therefore, in consideration of the limitation on the strength of the material, and the excellent performance record, the Bureau has amended paragraph (a)(2) of this section to authorize dilute solutions of certain corrosive materials to be shipped as a consumer commodity in 1 quart capacity containers except aboard aircraft.

A number of petitioners have requested changes in various paragraphs to this section. One petitioner stated that paragraph (a)(6)(i) is confusing and needs clarification. The Bureau agrees and has reworded this paragraph.

PART 174

SEC. 174.1

One petitioner stated that this section implies that Part 174 applies only to rail carriers and not to shippers. As Part 174 does impose certain duties on shippers, Section 174.1 has been amended to reflect that fact.

SEC. 174.3

This section has been amended by adding " * * * except as provided in Section 174.47(b)" in order to eliminate a possible conflict between Sections 174.3 and 174.47(b).

SEC. 174.5

The Bureau has amended this section to allow carriage of signaling devices necessary for safe operation of rail equipment without specification packaging, labeling, and shipping papers. These provisions are less restrictive and therefore are incorporated without notice.

SEC. 174.8

One petitioner objected in this section to the authorization of a representative of this initial carrier and the Bureau of Explosives to inspect methods of manufacture, packaging, and stowage insofar as they affect safety in transportation.

This provision has been in the regulations for at least thirty years and a change at this point would be beyond the scope of this rule making. The Bureau has amended (b) to reference other shipping papers that are authorized.

SEC. 174.9

One petitioner requested that in paragraph (c) a provision be made for writing information " * * * on a plain piece of paper if no printed cards are available." This paragraph does not require a "preprinted card."

The same petitioner also requested that the address and telephone number of the Bureau of Explosives be added to this paragraph. Since the address of the Bureau of Explosives is given in Section 171.7 of 49 CFR, it is considered unnecessary to repeat it here.

A petitioner suggested that the requirements in paragraph (c) for safety valves and tanks be set up in the same format as that in 49 CFR. The Bureau does not agree with this approach because tests on safety valves and tanks may not be due at the same time.

Two petitioners pointed out an inconsistency between paragraph (b) of this section and Section 173.29(g)(i) therefore the inconsistency has been removed from § 173.29(g)(i).

SEC. 174.10

A petitioner requested that in paragraph (a) the requirement to inspect the roof of a car be deleted since roof ladders and roof running boards are prohibited by FRA rules. Section 174.10 is essentially a restatement of existing regulations. The suggestion is beyond the scope of this rule making and may be considered in a future rule making.

SEC. 174.24

A petitioner questioned what purpose is served by requiring the intermediate carrier to have the certificate "on file," while not requiring that it be on the train in § 174.24. The certificate assures the carrier that the shipper has prepared the shipment in accordance with the requirements of 49 CFR. The train crew needs information as to what hazardous materials are being carried but does not need a certificate.

One petitioner recommended that paragraph (c) be revised to include "hazardous materials in limited quantities." "Limited quantities" corresponds with the former "exempt quantities" in present 49 CFR. Shipping papers were always required for these shipments and the Bureau, in the interest of safety, knows of no reason to change this requirement.

The same petitioner made the comment, "Combustible liquids in containers of less than 110 gallons are now exempt from all subchapter requirements per § 173.118(a), (sic) on shipping paper requirements for limited quantities in certain rail movements per § 172.200(b)(4). Because of this, they should also be exempt from rail shipping papers in the same manner as the ORM-A, B, C, and D." Since combustible liquids in containers of less than 110 gallons are ex-

cepted from the requirements of this subchapter per § 173.118(e), no shipping papers are required by rail.

SEC. 174.25

One petitioner strongly objected to the quantity of information required by paragraph (b). The Bureau fails to understand this strong objection since this paragraph requires only a placard endorsement and a placard notation, in addition to those proposed by the petitioner himself. One petitioner suggested that the sentence "The word placarded must immediately precede the name of the placard" be added in paragraph (a)(1). This has been provided for in the table in paragraph (a)(2) and paragraph (a)(1) has been deleted. A petitioner objected to the requirement in paragraph (a)(2) that the placard endorsement be in letters at least 3/8-inch high. Another petitioner recommended an alternative to this entry and the Bureau has made provisions for the alternative to be used. The EMPLOY placarding requirement for a Combustible liquid in tank cars has been deleted by the Bureau. Paragraph (b) has been reworded for clarity and to make the required shipping paper entries in the description as similar as possible to those in Part 172.

It was recommended that Chlorine and Oxygen placard notations be removed. The Bureau believes that they are such common hazardous materials that they should be noted on the shipping papers in the interest of safety. In addition, the petitioner states that the table should make provisions for mixed loadings as allowed in Section 172.504(b). The Bureau believes that since it is in Section 172.504(b) it is not necessary in the table.

SEC. 174.26

One petitioner suggested that the sentence, "This notice must not include other cars in the train" be added in paragraph (a). The Bureau does not believe that it is necessary to prohibit the listing of cars placarded other than "Explosive A" or "Poison Gas" on the consecutively numbered "notice to crews" because the listing of other cars does not detract in any way from the effectiveness of the notice.

One petitioner recommended that in paragraph (b) the document required in this paragraph be a "separate document" and that it indicate that the placards are actually on the car. The Bureau does not agree that it should be mandatory that this document be "separate" although this is permissible because having the "notice to crews" on the same document does not detract from its effectiveness.

SEC. 174.56

In response to a number of petitioners who objected to the requirements for loading drums, this section has been deleted in its entirety and may be made the subject of future rule making. The general requirements of Section 174.55 will apply to the loading of drums.

SEC. 174.61

This section has been changed by adding the word "freight" before "contain-

er" because Section 171.8 defines only "freight container" and not "container."

Sec. 174.63

One petitioner objected to the addition of DOT specification 51 tanks to paragraphs (b) and (c). The Bureau believes that tanks of this specification should be subject to the same requirements as the other portable tanks previously listed in 49 CFR, i.e., DOT specification 52, 53, 56, and 57 portable tanks.

Sec. 174.83

One petitioner questioned why "Poison Gas" was dropped from (c) and (d) of this section. These paragraphs refer to switching operation and cars placarded "Poison Gas" are not required to be separated from the engine.

Sec. 174.87

A petitioner questioned why reference to "engine" was not included in paragraph (a) (1). It is not the intent of the Bureau to preclude placing loaded placarded cars next to an engine in mixed train service.

Sec. 174.91

A petitioner states that the provisions of this section will interfere with development of "unit" trains which consist entirely of loaded tank cars and suggests that some provisions be incorporated to permit tank cars next to engines. The Bureau disagrees and feels it is essential to prohibit engine next to tank cars in freight transportation service.

Sec. 174.93

A petitioner recommended deletion of this section. The Bureau believes that so-called empty cars may contain significant amounts of hazardous materials and do present a very real hazard, therefore, the provisions of this section will be retained.

This section has been changed to except empty tank cars last containing combustible liquid from being placed nearer the second car from the engine or occupied caboose because there are no car placement requirements for loaded cars placarded "Combustible".

One petitioner stated that this is an entirely new requirement without prior opportunity for public comment. However, requiring "EMPTY" placards for empty tank cars was proposed as § 172.506 (39 FR 3177) and published in final form as § 172.510. The car placement rules in § 174.93 were proposed originally to apply to all placarded cars. The section as finally adopted applies to empty placarded tank cars other than those containing combustible liquid.

Sec. 174.101

A petitioner questioned why there is reference to blocking and bracing and 3 mile per hour impact in certain paragraphs in this section. One paragraph relates to freight containers and the other to truck bodies and these references are needed in each of the paragraphs because proper blocking and bracing is required in both types of equipment.

Sec. 174.104

The last sentence of paragraph (b) (5) has been deleted in order to conform with Section 174.404(b) (1). A petitioner states that paragraph (b) (3) should be amended to conform with FRA's ruling on ladders and roof running boards. The Bureau considers that the inspection of roofs of cars used for Class A explosives is so important that it should be done even if it is necessary to obtain a ladder to do it. A note has been added to paragraph (f) of this section to allow use of present form of car certificates until a specified date.

Sec. 174.110

A petitioner requested that this section be modified to indicate that an "EXPLOSIVES A" placard is required only when the magazine contains Class A explosives. This change in the requirements has been made.

The petitioner also states that magazine cars should not be subject to car placement requirements. The Bureau does not agree because 150 pounds of explosives in a magazine car could produce quite devastating consequences when not placed in accord with car placement requirements.

Sec. 174.201

Paragraph (c) of this section has been amended to add gondola cars and flat cars because these two types of cars were inadvertently omitted in the amendment.

Sec. 174.204

In paragraph (a) (1) the word "not" was inadvertently omitted twice. In paragraph (a) (2) reference to the definition of private track was made for clarification purposes.

Sec. 174.208

One petitioner suggested that the provisions of this section should be placed in other paragraphs. The Bureau does not agree since it is better to have requirements that address the same or similar subjects located in one place in the regulations.

Sec. 174.280

One petitioner stated that this paragraph which references a poison label could be interpreted to mean any poison label, not only a DOT poison label. The Bureau does not agree since the 49 CFR speaks only to DOT requirements.

Sec. 174.290

A petitioner wanted to know why DOT 110A-W was not included in paragraph (b) (2). It is not in § 174.532(1) (2) of 49 CFR and did not appear in the Notice to this docket and to insert this reference now is beyond the scope of this rule making.

Sec. 174.615

A petitioner states that this section should conform with the provisions of Section 174.57. The Bureau does not agree because this section is written specifically for poisons.

Sec. 174.700

A petitioner objects to the lack of specific blocking and bracing requirements and references present in Section 174.532(j) (4). The requirements in this latter section are very general and are covered elsewhere in this part (see Section 174.55).

Sec. 174.800

A petitioner objects to the use of "carboys" in this section and suggests the use of the word "containers." This usage is in present 49 CFR and in the Notice to the docket. A change is beyond the scope of this rule making.

PART 175

Sec. 175.10

Paragraph (a) (2) has been amended to except from regulation, aircraft parts and accessories that are transported by aircraft operators in their own aircraft and for the operation of their aircraft. This section has been expanded to authorize the carriage of smoke grenades, and hand-held flares for use in sport parachute jumping. The section has further been expanded to authorize carriage of smoking materials intended for use by any person aboard an aircraft with certain exceptions.

A petitioner recommended that a paragraph be added to this section to include self-contained breathing apparatus, halide detectors, and gas chromatographs for use in emergency situations. The Bureau believes this request is too general and is not within the scope of this rule making. Therefore, the Bureau has not added a new paragraph as petitioned.

Sec. 175.30

This section has been amended to require that shipping documents be retained at least 90 days. This change was made in order to specify a time period shipping documents must be retained. The section was further amended for clarification and now requires aircraft operators to inspect outside packages or the outside container prepared in accordance with § 173.25 of the subpart, except ORM-D materials packed in a freight container and offered for transportation by one consignor.

Sec. 175.33

Based on a number of inquiries, this section has been changed to require an aircraft operator to give written information to the pilot-in-command meaning one document is required rather than two as originally stated in the amendment. Also, it was the Bureau's intent that a pilot-in-command receive the same minimum description information (§§ 172.202, 172.203) as is given to a member of a train crew (§ 174.24) or the driver of a motor vehicle (§ 177.817) in addition to the information required particularly for aircraft operations. This section has been changed accordingly.

Sec. 175.75

Paragraph (a) is being revised to remove the unnecessarily detailed refer-

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ence to small, single pilot cargo-only aircraft since the reference to § 175.85(b) is sufficient. Paragraph (a) (2) has been revised to more clearly specify the quantity limitations authorized aboard aircraft. In the Notice, it was stated that the intent of the proposed revision was to consider a freight container in the same category as any inaccessible cargo pit or bin for the purpose of carrying hazardous materials aboard aircraft. What was not clear in this statement was the fact that freight containers were to be given this status when they were located in accessible cargo pits (compartments) aboard cargo-only aircraft. Also, the Bureau considers the words "pit" and "bin" to be archaic and lacking definition in current regulatory terminology and, therefore, has chosen the word "compartment" to take their place. Since materials authorized only aboard cargo-only aircraft must be accessible to a crew member during flight, these two subparagraphs only apply to materials that are permitted to be carried aboard passenger-carrying aircraft; therefore, they are being revised to reference such materials.

A number of persons have read paragraph (a) (2) as authorizing 50 pounds net weight in any inaccessible freight container, regardless of its location aboard an aircraft. This is not the case. If a freight container is located in any inaccessible compartment, the limitation applies to the compartment. Therefore, no more than 50 pounds total may be carried in any inaccessible compartment whether in freight containers or not. However, in the case of the cabin area of a cargo-only aircraft, 50 pounds may be loaded in each inaccessible freight container since the cabin area (cargo compartment) is accessible even though freight containers stowed therein may not be accessible beyond the first loaded position. The regulation is being revised to more clearly relate to these conditions. Also, the provision for nonflammable gases has been combined into paragraph (a) (2) to make it clear that 150 pounds of such gases are permitted in addition to the 50 pounds specified in the limitation.

Sec. 175.85

This section has been revised in part for clarity. One petitioner urged that § 175.85 be amended to limit the accessibility requirement to only those materials which are likely to cause damage to the aircraft through fire or corrosion. The petitioner contended that there are other materials such as radioactive isotopes, for example, which present a hazard only when in close proximity to people, animals, or foodstuffs. While the petitioner's recommendation may have merit, it is not within the scope of this rulemaking and will be considered at a later date.

Sec. 175.700

Paragraph (d) is being added to this section consistent with the restrictions previously set forth in 14 CFR 103.7(b) (6).

PART 176

Sec. 176.5

A new paragraph (b) (8) is added to exclude foreign vessels from the requirements of this subchapter when they do not enter the internal waters of the United States (such as harbors and estuaries) if hazardous materials are carried in accordance with the requirements of the IMCO Code and are not subject to paragraph (c) of this section.

Sec. 176.11

Based on an inquiry concerning the exceptions specified in § 171.12 and paragraph (a) of this section, the exceptions applicable to vessels have been re-examined. Recognizing the need to establish an appropriate interface between operations authorized to be conducted in accordance with IMCO Code and those not so authorized, this amendment makes provision for full adherence to the IMCO Code, except for the stowage and carriage requirements of Part 176. Included in the provisions is recognition of the handling of hazardous materials in certain port facilities when the hazardous materials are prepared in the same manner as required on vessels.

Sec. 176.15

This section has been amended to clarify the enforcement authority of the U.S. Coast Guard.

Sec. 176.27

The last part of § 176.27(b) has been deleted, and reference to the IMCO Code and § 171.12(b) has been made, in order to maintain consistency.

Sec. 176.30

This section has been amended by the addition of a new paragraph (a) (6) to require any additional information required by § 172.203 to be added to the dangerous cargo manifest such as information pertaining to exemptions and limited quantities.

Sec. 176.63

This section has been amended to clarify the requirements for protection from the sun for "on deck" stowage.

Sec. 176.65

This new section is added in recognition of the not infrequent vessel loading situations in which absolute conformity to all of the terms of a particular specification style regulation is not practicable or, on some occasions, not possible. Consistent with past practice and with somewhat similar provisions in § 176.100 regarding the Class A explosives and § 176.415 regarding nitro carbo nitrate and certain ammonium nitrates, new § 176.65 provides a controlled means for on-the-scene evaluation and approval of equally effective stowage alternatives.

Sec. 176.76

One petitioner recommended that allowances from the requirements for securing packages be included for the

shipment of bags. The Bureau believes that not requiring vertical restraint if the shape of the packages and the stuffing pattern precludes shifting of the load, rather than eliminating all restraint requirements, will provide for an acceptable level of safety. Authorization has been given to the Commandant, U.S. Coast Guard to approve on an individual basis and prescribe conditions for the carriage aboard vessels of Class A explosives in a highway vehicle, railroad vehicle or freight container. Also, paragraph (g) (3) of this section has been amended to clarify the stowage requirements for portable tanks containing hazardous materials.

Sec. 176.78

Paragraph (a) has been altered to eliminate an unintentional implication that power-operated trucks must be exclusively used aboard vessels in spaces containing hazardous materials.

Sec. 176.83

One petitioner recommended that the on-deck horizontal stowage requirements in this section be made less restrictive, similar to the stowage requirements for break bulk freight. The Bureau has not received sufficient supporting data and the recommended change has not been made. The April 15 FEDERAL REGISTER publication inadvertently omitted from Table I vertical column headings 9 through 16 of the explosives loading and storage chart for Class B and Class C explosives. These column headings have now been added. Also, Table II has been amended to correct inadvertent omissions and to make the segregation requirements for poison gases the same as the segregation criteria in the IMCO code.

Sec. 176.88

This section has been amended to permit the District Commander to approve, in writing, certain vessels to be treated as ferry vessels.

Sec. 176.115

A petitioner stated that paragraph (a) (2) should be deleted as it is redundant of § 176.74(f) and less restrictive. The Bureau disagrees as they are two different restrictions. Section 176.115(a) (2) states that hazardous materials may not be stowed nearer than 25 feet in a horizontal plane to the crew's quarters while § 176.74(f) states that they may not be stowed within a horizontal distance of 25 feet of an operating lifeboat or embarkation point of a lifeboat. Therefore, the petition is denied.

Sec. 176.205

A petitioner urged that § 176.205(a) be amended to read " * * * hold capable of being ventilated * * * " in lieu of " * * * ventilated hold * * * ". The Bureau agrees with this change for non-flammable compressed gases; however, it does not believe that this is an adequate provision for flammable gases and has accordingly changed paragraph (b) by inserting a new paragraph (b) (1) to

continue to require ventilated holds for flammable gases.

Sec. 176.300

A petitioner expressed a desire that § 176.300 as proposed in the Notice be reinstated. The Bureau does not believe that this is necessary as the purpose of that section is covered by § 176.11(c) for combustible liquids.

Sec. 176.305

A petitioner urged that paragraph (b) (1) be changed for packaged flammable liquids with a flash point above 73° F. by allowing them to be stowed in nonventilated holds. The Bureau agrees and has amended this requirement for packaged flammable liquids with a flash point above 73° F.

Sec. 176.315

A petitioner stated that these requirements are in conflict with those in 46 CFR 98.30-37. The Bureau agrees and has resolved the conflict by amending § 176.315 to exclude portable tanks meeting the requirements of 46 CFR Subpart 98.35 or 46 CFR Part 64.

Sec. 176.328

This section has been redesignated as § 176.905 to place it in a more appropriate section of Part 176. An editorial correction to the parenthetical at the end of paragraph (c) has been made.

SECS. 176.405 AND 176.900

A petitioner suggested that §§ 176.405 (a) and 176.900(d) (7) be deleted as they are repetitious of § 176.58. The Bureau disagrees as they require the removal of the residue of specific material from the hold or compartment. Section 176.58 requires the removing of all debris of a general rather than specific nature.

SECS. 176.410 AND 176.415

These sections have been revised to clarify the kinds of ammonium nitrate subject to regulation and to bring them into conformance with regulations previously contained in 46 CFR Part 146. A petitioner stated he believed the nitro carbo nitrate should be included in paragraph (b) of § 176.415. The Bureau believes nitro carbo nitrate should be treated in the same manner as ammonium nitrate (organic coating); therefore, written permission is required.

Sec. 176.800

A petitioner stated that as written, paragraph (b) is not achievable on a container vessel. The Bureau agrees and has added a second sentence to this paragraph to provide for corrosive materials stowed in freight containers or barges aboard vessels.

A petitioner stated that he believed that stowage over combustibles should be allowed for those materials which are corrosive to skin only, and will not react with combustibles. The Bureau disagrees as the Hazardous Materials Regulations make no provisions for separate classification, marking or labeling of materials corrosive to skin only.

SEC. 176.805

A petitioner stated that paragraph (a) applies only to break bulk stowage and it should be so stated to avoid misinterpretation. The Bureau agrees and this section has been rewritten for clarification.

SEC. 176.900

This section has been amended to clarify the stowage requirements for cotton or fiber materials.

PART 177

SEC. 177.817

Several petitioners pointed out that paragraph (b), as written, would require that the shipper certification as prescribed in § 172.204 accompany the shipping paper being transported with a hazardous material shipment. This was not the Bureau's intent and the section has been amended accordingly. One petitioner stated that the requirement in paragraph (e) for shipping papers to be within the immediate reach of the driver of a motor vehicle while he or she is restrained by the lap belt was too excessive. The intent of this requirement is to limit the area in which the driver may carry hazardous materials shipping documents in the cab of the vehicle. This restriction is necessary in order that emergency response personnel can locate shipping documents quickly in the event that the driver becomes disabled.

EFFECTIVE DATE

The recently changed effective date provision has been amended to eliminate early compliance with placarding of tank cars containing combustible liquids. A specific COMBUSTIBLE placard is provided in Docket HM-103/112 for this purpose, rather than the DANGEROUS placard to which Docket HM-102 refers. Because of this, it appears advisable to place compliance in this particular on the same schedule as the rest of the placarding requirements. Therefore, the references in the effective date provision to HM-102 placarding are deleted.

Accordingly 49 CFR Parts 171 through 177 are amended as set forth below.

PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

In Part 171, the authority citation following the table of sections is amended to read as follows:

AUTHORITY: 18 U.S.C. 834, 48 U.S.C. 170(7) (49 U.S.C. 1471, 1472(h) (1), 1807), 49 CFR 1.53(e)-(h).

§ 171.7 [Amended]

In § 171.7 paragraph (c) (24) is deleted; (c) (25) is redesignated (c) (24), and new paragraphs (c) (25) and (26) are added to read as follows: "(25) USERDA: United States Energy Research and Development Administration, Washington, D.C. 20545." and "(26) USNRC: United States Nuclear Regulatory Commission, Washington, D.C. 20555."; Paragraph (d) (3) is amended by changing the subparagraph identifications of (d) (3) (iii) to (d) (3) (iv); of (d) (3) (iv) to (d) (3) (v) and by adding a

new (d) (3) (iii) to read, "Compressed Gas Association pamphlet C-7, Appendix A is titled, 'A Guide for the Precautionary Markings for Compressed Gas Containers', dated May 15, 1971. Addenda issued January 1976."; Paragraph (d) (17) is deleted and paragraphs (d) (18) and (19) are redesignated paragraphs (d) (17) and (18).

§ 171.8 [Amended]

In § 171.8 the following definitions are amended or added: "Barge" is amended by placing a period after vessel and deleting the remainder of the definition; the "Bureau of Explosives" definition is amended by changing the abbreviation in parenthesis to read "B of E"; "Cargo tank" is amended by adding a new sentence "Any packaging fabricated under specifications for cylinders is not a cargo tank." at the end of the definition. "Cargo vessel" is amended by deleting "or a barge" in the second line; "Consumer commodity" is amended by adding "in a form intended and suitable" after "distributed" in the second line; after the definition of "Etiologic agent" a new definition is added to read: "'F.' means degree Fahrenheit." IMCO is amended by changing "International" to "Inter-governmental" in the first line; "Limited quantity" is revised to read as follows. "Limited quantity", when specified as such in a section applicable to a particular material with the exception of Poison B materials, means the maximum amount of a hazardous material for which there is a specific labeling and packaging exception"; "Mode" is amended by adding "any" after "means" in the first line; "Occupied caboose" is amended by adding "being" following "rail car" in the first line; "Placarded car" is amended by adding "rail" preceding "car" in the first line, deleting the period at the end of the definition, and adding the words, "except those cars displaying only the FUMIGATION placards as required by § 172.510." at the end of the definition. "Portable tank" is amended by deleting "or" preceding "tank" in the last line, by changing the period in the last line to a comma, and by adding thereafter "or trailers carrying 3AX, 3AAX, or 3T cylinders."; "Public vessel" is amended to read, "Public vessel" means a vessel owned by and being used in the public service of the United States. It does not include a vessel owned by the United States and engaged in trade or commercial service or a vessel under contract or charter to the United States."; "Rail freight car" is amended by adding "flat car," following "box car," in the third line; a new definition is added to read, "Research" means investigation or experimentation aimed at the discovery of new theories or laws and the discovery and interpretation of facts or revision of accepted theories or laws in the light of new facts."; "Shipping paper" is amended by striking "and" in the last line, replacing it with a comma, and adding "and 172.204." after 172.203; "STC (single-trip container)" is amended to read, "STC (single-trip container)" means a container that may not be re-

filled and reshipped after having been previously emptied, except as provided in § 173.28." "Technical name" is amended by adding the sentence "Generic descriptions authorized for use as technical names are, Organic phosphate compound, Organic phosphorus compound, Organic phosphate compound mixture, Organic phosphorus compound mixture, Methyl parathion, and Parathion."

§ 171.9 [Amended]

In § 171.9 the introductory text of paragraph (a) is amended by changing "contexts" in the second line to read "context".

§ 171.11 [Removed]

Section 171.11 is deleted in its entirety.

§ 171.12 [Amended]

In § 171.12 paragraph (b) is amended by adding "(other than Class A explosives or radioactive materials)" after the word "material" in the third line; the following sentences are added at the end of the paragraph: "When a material is transported within the United States by air, highway, or rail under an IMCO class, the entry on the shipping paper required by § 172.202(a) (2) must include a class set forth in this subchapter that most appropriately corresponds to the IMCO class. For example, according to IMCO, the description and class for ethylene oxide is "Ethylene Oxide, 2" or "Ethylene Oxide, Gas 2". While ethylene oxide in domestic transportation would be classed a flammable liquid, the class in this subchapter that most appropriately corresponds to the IMCO class is "flammable gas".

The proper entry would therefore be "Ethylene Oxide, Flammable Gas" or "Ethylene Oxide, 2 Flammable Gas."; paragraph (c) is amended by adding the words "the surface of the package or on" preceding the word "decals" in the 16th line; paragraph (d) is revised to read, "(d) Section 171.2 notwithstanding, a hazardous material (other than an explosive or a radioactive material) being imported into or exported from the United States or passing through the United States in the course of being shipped between places outside the United States may be offered and accepted for transportation and transported by motor vehicle within a single port area (including contiguous harbors) when packaged, marked, classed and labeled in accordance with the IMCO Code, if the hazardous material is offered and accepted in accordance with the requirements of

Subparts C and F of Part 172 of this subchapter pertaining to shipping papers and placarding. (See § 176.11 for exceptions applicable to vessels.)"

PART 172—HAZARDOUS MATERIALS TABLE AND HAZARDOUS MATERIALS COMMUNICATIONS REGULATIONS

In Part 172, the authority citation following the table of sections is amended to read as follows:

AUTHORITY: 18 U.S.C. 834, 46 U.S.C. 170(7) (49 U.S.C. 1471, 1472(h) (1), 1807), 49 CFR 1.53(e)-(h).

§ 172.100 [Amended]

In § 172.100, the introductory text of paragraph (b) (1) is amended by deleting the last sentence and substituting the following sentence therefor: "A material meeting the description of an asterisk entry is not subject to the requirements of this subchapter if the material does not meet the definition of a hazardous material." The introductory text of paragraph (b) (2) is amended by deleting the phrase "Except as provided in § 173.501", and capitalizing the first letter of the next word in the sentence; paragraph (b) (3) is amended by deleting the phrase "Except as provided in § 173.501", and capitalizing the first letter of the next word in the sentence; the second sentence of paragraph (c) (2) is amended to read as follows, "The word "or" in italics indicates that any terms in the sequence may be used as the proper shipping name as appropriate." Paragraph (c) (5) is added to read as follows, "(5) When one entry references another entry by use of a "see", if both names are in Roman type, either name may be used as a proper shipping name (e.g. Isopropanol see Alcohol, n.o.s.)." Paragraph (c) (6) is added to read as follows: "(6) When a shipping name includes a concentration range as part of the shipping description, the actual concentration being shipped, if it is within the range stated, may be used in place of the concentration range. For example: Hydrogen peroxide solution (8% to 40% peroxide) may be shipped described as "Hydrogen peroxide solution, 30% peroxide." or "30% Hydrogen peroxide solution." Paragraph (c) (7) is added to read as follows: "(7) The use of the prefix "mono" is optional in any shipping name. Thus monoethanolamine may be used interchangeably with ethanolamine. In the word "trichloromonofluoromethane" the term "mono" is considered as a prefix to the term "fluoromethane". Paragraphs (d), (e), and (f) are revised to read as follows:

(d) Column 3 contains a designation of the hazard class corresponding to each proper shipping name or the word "Forbidden". A material for which the class entry is "Forbidden" must not be offered or accepted for transportation. When re-evaluation of test data or new test data indicates a need to modify the hazard class or labels specified for a material specifically identified in § 172.101, these data should be reported to the Office of Hazardous Materials Operations.

(e) Column 4 specifies the labels required to be applied to each outside packaging, subject to the additional labeling requirements in § 127.402.

(f) Column 5 references the applicable packaging section of Part 173. Exceptions from some of the requirements of this subchapter are noted in column 5(a). References to specific packaging requirements and exceptions other than those specified in 5(a) are noted in column 5(b).

Paragraph (g) is deleted and paragraph (h) redesignated as paragraph (g). The introductory text of paragraph (g) is amended to read "Column 6 indicates the maximum net quantity in one package for air transportation or passenger railcar; paragraph (g) (1) is revised by changing "7" in the first line to read "6", by adding the word "net" after the word "maximum" in the second line, and adding the words "or passenger railcar." after the word "aircraft" in the third line; paragraph (g) (2) is amended by changing "7" in the first line to read "6", and by adding the word "net" after the word "maximum"; a new paragraph (g) (3) is added to read, "(g) (3) For a flammable liquid identified by a n.o.s. entry, the net quantity limitation for carriage aboard a passenger-carrying aircraft of railcar is one gallon per package, and for cargo-only aircraft is 55 gallons per package, if:

(i) The material has a flash point of 73° F. or higher;

(ii) The material does not meet the definition of any other hazard class as defined in this part, and

(iii) The flash point, or an indication that the flash point is 73° F. or higher, is marked on the outside package."

Paragraph (i) is redesignated paragraph (h) with the following changes—In the first and eighth lines of the introductory text, change the figure "8" to "7"; in paragraph (h) (4) the word "is" is added in the 4th line following the word "and".

Section 172.101, *Hazardous Materials Table*, is revised to read as follows:

§172.101 Hazardous Materials Table

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| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|--|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|--|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | | | | | | | | | | |
| | Accumulator, pressurized (<i>pneumatic or hydraulic</i>), containing nonflammable gas | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | | No limit | | 1,2 | 1,2 | |
| | Acetal | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,3 | 4 | |
| | Acetaldehyde (<i>ethyl aldehyde</i>) | Flammable liquid | Flammable liquid | None | 173.119 | Forbidden | 10 gallons | 1,3 | 5 | |
| A | Acetaldehyde ammonia | ORM-A | None | 173.505 | 173.510 | | | | | |
| | Acetic acid (<i>aqueous solution</i>) | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | Stow separate from nitric acid or oxidizing materials |
| | Acetic acid, glacial | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | Stow separate from nitric acid or oxidizing materials. Segregation same as for flammable liquids |
| | Acetic anhydride | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 gallon | 1,2 | 1,2 | |
| | Acetone | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,3 | 4 | |
| | Acetone cyanohydrin | Poison B | Poison | None | 173.346 | Forbidden | 55 gallons | 1 | 5 | Shade from radiant heat. Stow away from corrosive materials |
| | Acetone oil | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Acetonitrile | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1 | 4 | Shade from radiant heat |
| | Acetyl benzoyl peroxide, solid | Forbidden | | | | | | | | |
| | Acetyl benzoyl peroxide solution, not over 40% peroxide | Organic peroxide | Organic peroxide | None | 173.222 | Forbidden | 1 quart | 1,2 | 1 | |
| | Acetyl bromide | Corrosive material | Corrosive | 173.244 | 173.247 | 1 quart | 1 gallon | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| | Acetyl chloride | Flammable liquid | Flammable liquid | 173.244 | 173.247 | 1 quart | 1 gallon | 1 | 1 | Stow away from alcohols. Keep cool and dry. Separate longitudinally by an intervening complete compartment or hold from explosives |
| | Acetylene | Flammable gas | Flammable gas | None | 173.303 | Forbidden | 300 pounds | 1 | 1 | Shade from radiant heat |
| A | Acetylene tetrabromide | ORM-A | None | 173.505 | 173.510 | 10 gallons | 55 gallons | | | |
| | Acetyl iodide | Corrosive material | Corrosive | 173.244 | 173.247 | 1 quart | 1 gallon | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| | Acetyl peroxide solution, not over 25% peroxide | Organic peroxide | Organic peroxide | 173.153 | 173.222 | Forbidden | 1 quart | 1,2 | 1 | |
| | Acid butyl phosphate | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 5 gallons | 1,2 | 1,2 | Glass carboys in hampers not permitted under deck |
| | Acid carboy empty. See Carboy, empty | | | | | | | | | |
| | Acid, liquid, n.o.s. | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 5 pints | 1 | 4 | Keep cool |
| | Acid, sludge | Corrosive material | Corrosive | None | 173.248 | Forbidden | 1 quart | 1,2 | 1 | |
| | Aerolein, inhibited | Flammable liquid | Flammable liquid and Poison | None | 173.122 | Forbidden | 1 quart | 1,2 | 5 | Keep cool. Stow away from living quarters |
| | Acrylic acid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 5 pints | 1 | 1 | |
| | Acrylonitrile | Flammable liquid | Flammable liquid and Poison | None | 173.119 | Forbidden | 1 quart | 1,2 | 5 | Keep cool |
| | Actuating cartridge, explosive (<i>fire extinguisher, or valve</i>) | Class C explosive | Explosive C | 173.114 | | 50 pounds | 150 pounds | 1,2 | 1,2 | Keep cool and dry |
| | Adhesive, n.o.s. See Cement, liquid, n.o.s. | | | | | | | | | |
| | Aerosol product, each aerosol container exceeding 50 cubic inches capacity. See Compressed gas, n.o.s. | | | | | | | | | |
| | Air, compressed | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.302 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Aircraft rocket engine (<i>Commercial</i>) | Flammable solid | Flammable solid | None | 173.238 | Forbidden | 550 pounds | 1,3 | 5 | |
| | Aircraft rocket engine igniter (<i>Commercial</i>) | Flammable solid | Flammable solid | None | 173.238 | Forbidden | 25 pounds | 1,3 | 5 | |
| | Airplane flare. See Fireworks, special | | | | | | | | | |
| | Alcohol, n.o.s. | Flammable liquid | Flammable liquid | 173.118 | 173.125 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Alcohol, n.o.s. | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Aldrin | Poison B | Poison | 173.364 | 173.376 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| A | Aldrin, cast solid | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| | Aldrin mixture, dry (with more than 65% aldrin) | Poison B | Poison | 173.364 | 173.376 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| A | Aldrin mixture, dry, with 65% or less aldrin | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |

| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|---|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | | | | | | | | | | |
| A | Aldrin mixture, liquid (with more than 60% aldrin) | Poison B | Poison | 173.345 | 173.361 | 1 quart | 55 gallons | 1,2 | 1,2 | If flash point less than 141 DEG F., segregation same as for flammable liquids |
| | Aldrin mixture, liquid, with 60% or less aldrin | ORM-A | None | 173.505 | 173.510 | | | | | |
| | Alkaline corrosive battery fluid | Corrosive material | Corrosive | 173.244 | 173.249 | 1 quart | 5 gallons | 1,2 | 1,2 | |
| | Alkaline corrosive battery fluid with empty storage battery | Corrosive material | Corrosive | None | 173.257 | Forbidden | 5 pints | 1,2 | 1,2 | |
| | Alkaline corrosive liquid, n.o.s. | Corrosive material | Corrosive | 173.244 | 173.249 | 1 quart | 5 gallons | 1,2 | 1,2 | |
| | Alkaline liquid, n.o.s. | Corrosive material | Corrosive | 173.244 | 173.249 | 1 quart | 5 gallons | 1,2 | 1,2 | |
| | Alkanesulfonic acid | Corrosive material | Corrosive | 173.244 | 173.245 | 5 pints | 1 gallon | 1,2 | 1 | |
| | Alkyl aluminum halides. See Pyrophoric liquid, n.o.s. | | | | | | | | | |
| A | Allethrin | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| | Allyl alcohol | Flammable liquid | Flammable liquid and Poison | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Allyl bromide | Flammable liquid | Flammable liquid | 173.118 | 173.119 | Forbidden | 10 gallons | 1,2 | 1 | |
| | Allyl chloride | Flammable liquid | Flammable liquid | None | 173.119 | Forbidden | 10 gallons | 1,2 | 5 | |
| | Allyl chlorocarbonate | Flammable liquid | Flammable liquid | None | 173.288 | Forbidden | 5 pints | 1 | 5 | Keep dry. Separate longitudinally by an intervening complete hold or compartment from explosives. Segregation same as for corrosive materials |
| | Allyl chloroformate. See Allyl chlorocarbonate | | | | | | | | | |
| | Allyl trichlorosilane | Corrosive material | Corrosive | None | 173.280 | Forbidden | 10 gallons | 1 | 1 | Keep dry |
| | Aluminum alkyls. See Pyrophoric liquid, n.o.s. | | | | | | | | | |
| | Aluminum bromide, anhydrous | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1,2 | 1,2 | Keep dry |
| | Aluminum dross, wet or hot. See Sec. 173.123 | | | | | | | | | |
| | Aluminum hydride | Flammable solid | Flammable solid and Dangerous when wet | None | 173.206 | Forbidden | 25 pounds | 1,2 | 5 | Segregation same as for flammable solid labeled Dangerous When Wet |
| | Aluminum, liquid or paint. See Paint, enamel, lacquer stain, shellac, varnish, etc. | | | | | | | | | |
| | Aluminum, metallic, powder | Flammable solid | Flammable solid | 173.232 | 173.232 | 25 pounds | 100 pounds | 1,2 | 1,2 | Keep dry. Segregation same as for flammable solids labeled dangerous when wet |
| | Aluminum nitrate | Oxidizer | Oxidizer | 173.153 | 173.182 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Aluminum phosphate solution | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Aluminum phosphide | Flammable solid | Flammable solid and Dangerous when wet | None | 173.154 | Forbidden | 25 pounds | 1,2 | 1,2 | Stow away from acids and oxidizing materials |
| | Antofol. See High explosive | | | | | | | | | |
| | 2-(2-Aminoethoxy) ethanol | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | N-Aminoethylpiperazine | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Aminopropylidethanolamine | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | n-Aminopropylmorpholine | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | bis (Aminopropyl) piperazine | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Ammonia, anhydrous | Nonflammable gas | Nonflammable gas | 173.306 | 173.304 173.314 173.315 | Forbidden | 300 pounds | 1,2 | 4 | Stow in well ventilated space |
| | Ammonia solution (containing more than 44% ammonia) | Nonflammable gas | Nonflammable gas | 173.306 | 173.304 173.314 173.315 | Forbidden | 300 pounds | 1,2 | 4 | Stow in well ventilated space |
| | Ammonia solution (containing 44% or less ammonia in water). See Ammonium hydroxide | | | | | | | | | |
| | Ammonium arsenate, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | Stow away from alkaline corrosives |
| | Ammonium bifluoride. See Ammonium hydrogen fluoride | | | | | | | | | |

§172.101 Hazardous Materials Table (cont'd)

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| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|--|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|--|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | | | | | | | | | | |
| | Ammonium chlorate | Forbidden | Oxidizer | 173.153 | 173.154 173.235 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| A | Ammonium dichromate (<i>ammonium bichromate</i>) | ORM-B | None | 173.505 | 173.510 173.800 | 25 pounds | 100 pounds | | | |
| | Ammonium fluoride | ORM-B | None | 173.505 | 173.510 173.800 | 25 pounds | 100 pounds | | | |
| | Ammonium hydrogen fluoride solution | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 5 gallons | 1,2 | 1,2 | Keep dry |
| A | Ammonium hydrogen sulfate | ORM-B | None | 173.505 | 173.510 173.800 | 25 pounds | 100 pounds | | | |
| A | Ammonium hydrosulfide solution | ORM-A | None | 173.505 | 173.510 173.605 | 10 gallons | 55 gallons | | | |
| | Ammonium hydroxide (<i>containing not more than 44% ammonia</i>) | Corrosive material | Corrosive | 173.244 | 173.245 | 2 gallons | 2 gallons | 1 | 4 | |
| | Ammonium nitrate (no organic coating) | Oxidizer | Oxidizer | 173.153 | 173.182 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Ammonium nitrate (organic coating) | Oxidizer | Oxidizer | 173.153 | 173.182 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Ammonium nitrate-carbonate mixture | Oxidizer | Oxidizer | 173.153 | 173.182 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Ammonium nitrate fertilizer, <i>containing no more than 0.2% carbon</i> | Oxidizer | Oxidizer | 173.153 | 173.182 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Ammonium nitrate-fuel oil mixture. <i>See Nitro carbonate or Explosive, Class A or B</i> | | | | | | | | | |
| | Ammonium nitrate mixed fertilizer | Oxidizer | Oxidizer | 173.153 | 173.182 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Ammonium nitrate-phosphate | Oxidizer | Oxidizer | 173.153 | 173.182 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Ammonium perchlorate | Oxidizer | Oxidizer | 173.153 | 173.154 173.239a | 25 pounds | 100 pounds | 1,2 | 4 | Stow away from powdered metals |
| | Ammonium perchlorate. <i>See High explosives</i> | | | | | | | | | |
| | Ammonium permanganate | Oxidizer | Oxidizer | 173.153 | 173.154 | Forbidden | Forbidden | 1,2 | 1,2 | Separate from ammonium compounds and hydrogen peroxide. This material may be forbidden in water transporta- tion by certain countries |
| | Ammonium picrate. <i>See High explosive</i> | | | | | | | | | |
| | Ammonium picrate, wet (<i>with 10% or more water</i>) | Flammable solid | Flammable solid | 173.192 | | 1 pound | 1 pound | 1 | 4 | Stow away from heavy metals and their compounds |
| A | Ammonium polysulfide solution | ORM-A | None | 173.505 | 173.510 173.605 | 10 gallons | 55 gallons | | | |
| W | Ammonium sulfate nitrate | ORM-C | None | 173.505 | 173.910 | | | 1,2 | 1,2 | Must not be accepted for transportation while hot. Separate by an intervening hold or compartment from Class A ex- plosives. Separate from other explo- sives, corrosive materials, flammable solids, liquids, or gases, oxidizing materials, organic peroxides, or organic materials |
| | Ammonium sulfide solution | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Ammunition, chemical (<i>containing a Poison A liquid or gas</i>). <i>See Chemical ammunition (containing a Poison A material)</i> | | | | | | | | | |
| | Ammunition, chemical (<i>containing a Poison B material</i>). <i>See Chemical ammunition (containing a Poison B material)</i> | | | | | | | | | |
| | Ammunition, chemical (<i>containing an irritating liquid or solid</i>). <i>See Chemical ammunition (containing an irritating material)</i> | | | | | | | | | |
| | Ammunition, chemical, explosive, with Poison A material | Class A explosive | Explosive A and Poison gas | None | 173.59 | Forbidden | Forbidden | 6 | 5 | No other cargo may be stowed in the same hold with these items |
| | Ammunition, chemical, explosive, with Poison B material | Class A explosive | Explosive A and Poison | None | 173.59 | Forbidden | Forbidden | 6 | 5 | No other cargo may be stowed in the same hold with these items |
| | Ammunition, chemical, explosive, with irritant | Class A explosive | Explosive A and Irritant | None | 173.59 | Forbidden | Forbidden | 6 | 5 | No other cargo may be stowed in the same hold with these items |
| | Ammunition for cannon with empty projectile | Class B explosive | Explosive B | None | 173.39 | Forbidden | Forbidden | 1,2 | 5 | |
| | Ammunition for cannon with explosive projectile | Class A explosive | Explosive A | None | 173.54 | Forbidden | Forbidden | 6 | 5 | |
| | Ammunition for cannon with gas projectile | Class A explosive | Explosive A | None | 173.54 | Forbidden | Forbidden | 6 | 5 | |
| | Ammunition for cannon with illuminating projectile | Class A explosive | Explosive A | None | 173.54 | Forbidden | Forbidden | 6 | 5 | |
| | Ammunition for cannon with incendiary projectile | Class A explosive | Explosive A | None | 173.54 | Forbidden | Forbidden | 6 | 5 | |
| | Ammunition for cannon with inert loaded projectile | Class B explosive | Explosive B | None | 173.39 | Forbidden | Forbidden | 1,2 | 5 | |

| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|---|------------------------|---|-------------------|---------------------------------|--|----------------------------------|------------------------|---------------------------------|--|
| | | | | (a) Exceptions | (b) Specific requirements | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | Ammunition for cannon with smoke projectile | Class A explosive | Explosive A | None | 173.54 | Forbidden | Forbidden | 6 | 5 | |
| | Ammunition for cannon with solid projectile | Class B explosive | Explosive B | None | 173.89 | Forbidden | Forbidden | 1.2 | 5 | |
| | Ammunition for cannon without projectile | Class B explosive | Explosive B | None | 173.89 | Forbidden | Forbidden | 1.2 | 5 | |
| | <i>Ammunition, non-explosive</i> | | | 173.55 | | | | | | |
| | Ammunition for small-arms with explosive projectile | Class A explosive | Explosive A | None | 173.58 | Forbidden | Forbidden | 6 | 5 | |
| | Ammunition for small-arms with incendiary projectile | Class A explosive | Explosive A | None | 173.58 | Forbidden | Forbidden | 6 | 5 | |
| | <i>Ammunition, rocket. See Rocket ammunition</i> | | | | | | | | | |
| | <i>Ammunition, small-arms. See Small-arms ammunition</i> | | | | | | | | | |
| | Amyl acetate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1.2 | 1.2 | |
| | Amyl acid phosphate | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1.2 | 1.2 | |
| | Amylamine | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1.2 | 1 | |
| | Amyl chloride | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1.2 | 1 | |
| | Amylene, normal | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1.3 | 1.3 | |
| | Amyl formate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1.2 | 1 | |
| | Amyl mercaptan | Flammable liquid | Flammable liquid | None | 173.141 | Forbidden | 10 gallons | 1.2 | 1 | |
| | Amyl nitrite | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1.3 | 4 | |
| | Amyl trichlorosilane | Corrosive material | Corrosive | None | 173.280 | Forbidden | 10 gallons | 1 | | Keep dry |
| | Anhydrous ammonia. <i>See Ammonia, anhydrous</i> | | | | | | | | | |
| | Anhydrous hydrazine. <i>See Hydrazine, anhydrous</i> | | | | | | | | | |
| | Anhydrous hydrofluoric acid. <i>See Hydrogen fluoride</i> | | | | | | | | | |
| | Aniline oil drum, empty EE 173.347(d) | Poison B | | | | | | 1.2 | 1 | Do not accept unless returnable package notice is on drum and the instructions thereon have been carried out |
| | Aniline oil, liquid | Poison B | Poison | None | 173.347 | Forbidden | 55 gallons | 1.2 | 1.2 | Stow away from oxidizing materials and acids |
| | Anisoyl chloride | Corrosive material | Corrosive | 173.244 | 173.279 | 1 quart | 1 quart | 1 | 1 | Keep dry |
| | • Antifreeze compound, liquid | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1.2 | 1 | |
| | • Antifreeze compound, liquid | Combustible liquid | None | 173.118a | None | No limit | No limit | 1.2 | 1.2 | |
| | • Antifreeze preparation, liquid | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1.2 | 1 | |
| | • Antifreeze preparation, liquid | Combustible liquid | None | 173.118a | None | No limit | No limit | 1.2 | 1.2 | |
| | Antimonious chloride. <i>See Antimony trichloride</i> | | | | | | | | | |
| A | Antimony lactate, solid | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| | Antimony pentachloride | Corrosive material | Corrosive | None | 173.247 | 1 quart | 1 quart | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| | • Antimony pentachloride solution | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 5 pints | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| | Antimony pentafluoride | Corrosive material | Corrosive | None | 173.246 | Forbidden | 25 pounds | 1 | 5 | Keep dry |
| A | Antimony potassium tartrate solid | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| A | Antimony sulfide, solid | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| | Antimony trichloride, solid | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1.2 | 1.2 | Keep dry |
| | • Antimony trichloride solution | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 5 pints | 1 | 1 | Keep dry |
| | • Aqua ammonia solution (containing 44% or less ammonia). <i>See Ammonium hydroxide</i> | | | | | | | | | |
| | • Argon | Nonflammable gas | Nonflammable gas | 173.306 | 173.302 173.314 | 150 pounds | 300 pounds | 1.3 | 1.3 | |
| | Argon, liquid pressurized | Nonflammable gas | Nonflammable gas | None | 173.304 | Forbidden | 300 pounds | 1.3 | 1.3 | |
| | Arsenic acid, solid | Poison B | Poison | 173.364 | 173.366 | 50 pounds | 200 pounds | 1.2 | 1.2 | |
| | • Arsenic acid solution | Poison B | Poison | 173.345 | 173.348 | 1 quart | 55 gallons | 1.2 | 1.2 | |

§172.101 Hazardous Materials Table (cont'd)

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| (1) */ W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|--------------------------|---|----------------------------|---|-----------------------|--|--|--------------------------------------|----------------------------|-------------------------------------|--|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | | | | | | | | | | |
| * | Arsenical compound n.o.s., liquid, or arsenical mixture, n.o.s., liquid | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,2 | 1,2 | Keep dry |
| | Arsenical compound n.o.s., solid, or arsenical mixture, n.o.s., solid | Poison B | Poison | 173.364 | 173.367 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Arsenical dip, liquid (<i>sheep dip</i>) | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,2 | 1,2 | |
| | Arsenical dust | Poison B | Poison | 173.364 | 173.368 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Arsenical flue dust | Poison B | Poison | 173.364 | 173.368 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Arsenic bromide, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Arsenic chloride (<i>arsenious</i>) liquid. <i>See</i> Arsenic trichloride | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Arsenic iodide, solid | | | | | | | | | |
| | Arsenic pentoxide, solid | | | | | | | | | |
| | Arsenic, solid | Poison B | Poison | 173.364 | 173.366 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Arsenic sulfide, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Arsenic trichloride, liquid | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,2 | 1,2 | |
| | Arsenic trioxide, solid | Poison B | Poison | 173.364 | 173.366 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Arsenic, white, solid. <i>See</i> Arsenic trioxide, solid | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,2 | 1,2 | |
| | Arsenious acid, solid. <i>See</i> Arsenic trioxide, solid | | | | | | | | | |
| | Arsenious and mercuric iodide solution | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,2 | 1,2 | |
| | Arsine | Poison A | Poison gas and Flammable gas | None | 173.328 | Forbidden | Forbidden | 1 | 5 | |
| W | Asphalt, at or above its flashpoint | ORM-C | None | None | None | Forbidden | Forbidden | 1 | 5 | When applicable, no fire or residue thereof may be present in the furnace heating the substance while the vehicle is on board a cargo vessel |
| * | Asphalt, cut back | Flammable liquid | Flammable liquid | 173.118 | 173.131 | 1 quart | 10 gallons | 1,2 | 1 | |
| * | Asphalt, cut back | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| A | Automobile, motorcycle, tractor, or other self-propelled vehicle. <i>See</i> Motor Vehicle | Flammable solid | Flammable solid | None | 173.155 | Forbidden | 25 pounds | 1,2 | 1,2 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides Stow away from heavy metals Separate from ammonium compounds. Stow away from powdered metals Separate from ammonium compounds. Stow away from powdered metals Stow away from acids |
| | Automobile, motorcycle, tractor, or other self-propelled vehicle, engine, or other mechanical apparatus, with charged electric storage battery, wet. <i>See</i> Motor Vehicle | | | | | | | | | |
| | 1-Aziridinyl phosphine oxide (tris). <i>See</i> Tris-(1-aziridinyl) phosphine oxide | | | | | | | | | |
| | Bags, burlap, used, must be classed for the hazardous material previously contained in bag. <i>See</i> 173.28, 173.29 | Flammable solid | Flammable solid | None | 173.239 | Forbidden | 1 pound | 1,2 | 1,2 | |
| | Bags, sodium nitrate, empty and unwashed | | | | | | | | | |
| | Barium azide, wet, 50% or more water | | | | | | | | | |
| | Barium chlorate | Oxidizer | Oxidizer | 173.153 | 173.163 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Barium chlorate, wet | Oxidizer | Oxidizer | 173.153 | 173.163 | 25 pounds | 200 pounds | 1,2 | 1,2 | |
| | Barium cyanide, solid | Poison B | Poison | 173.370 | 173.370 | 25 pounds | 200 pounds | 1,2 | 1,2 | |
| | Barium nitrate | Oxidizer | Oxidizer | 173.153 | 173.182 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Barium oxide | ORM-B | None | 173.505 | 173.510 173.800 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Barium perchlorate | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Barium permanganate | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Barium peroxide (binoxide, dioxide) | Oxidizer | Oxidizer | 173.153 | 173.156 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Barrel, empty. <i>See</i> Drum, empty | Corrosive material | Corrosive | None | 173.259 | Forbidden | 5 pints | 1,2 | 1,2 | |
| | Battery charger with electrolyte (acid or alkaline battery fluid) | | | | | | | | | |
| | Battery, dry. Not subject to Parts 170- 189 of this subchapter | | | | | | | | | |
| | Battery, electric storage, wet | Corrosive material | Corrosive | 173.260 | | Forbidden | No limit | 1,2 | 1,2 | |

| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|--|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| W | Battery, electric storage, wet, with automobile, auto parts, engine (or other specifically named mechanical apparatus) | Corrosive material | Corrosive | 173.250 | 173.260 | No limit | No limit | 1,2 | 1,2 | Keep dry |
| | Battery, electric storage, wet with containers of corrosive battery fluid | Corrosive material | Corrosive | None | 173.258 | Forbidden | 2 gallons | 1,2 | 1,2 | |
| | Battery fluid. See Electrolyte (acid) or Alkaline battery fluid | | | | | | | | | |
| | Battery parts (plates, grids, etc., unwashed, exhausted) | ORM-C | None | 173.505 | 173.915 | | | 1,2 | 4 | |
| | Benzaldehyde | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Benzene (benzol) | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Benzene phosphorus dichloride | Corrosive material | Corrosive | None | 173.250a | Forbidden | 5 pints | 1 | 5 | |
| | Benzene phosphorus trichloride | Corrosive material | Corrosive | None | 173.250a | Forbidden | 5 pints | 1 | 5 | |
| | Benzine | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Benzoyl chloride | Corrosive material | Corrosive | 173.244 | 173.247 | 1 quart | 1 quart | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| | Benzoyl peroxide | Organic peroxide | Organic peroxide | None | 173.157 173.158 | Forbidden | 25 pounds | 1,2 | 1 | |
| | Benzyl bromide (bromotoluene, alpha) | Corrosive material | Corrosive | None | 173.281 | Forbidden | 5 pints | 1 | 5 | Keep dry |
| | Benzyl chloride | Corrosive material | Corrosive | 173.244 | 173.295 | Forbidden | 1 quart | 1 | 4 | Keep dry |
| | Benzyl chloroformate (or Benzyl chlorocarbonate) | Corrosive material | Corrosive | None | 173.288 | Forbidden | 5 pints | 1 | 5 | Keep dry |
| | Beryllium compound, n.o.s. | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Black powder | Class A explosive | Explosive A | None | 173.60 | Forbidden | Forbidden | 6 | 5 | |
| | Black powder igniter with empty cartridge bag | Class C explosive | Explosive C | None | 173.106 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Blasting caps—(1,000 or less) (Show actual number) | Class C explosive | Explosive C | None | 173.103 | Forbidden | Forbidden | 1,2 | 5 | Portable magazine or metal locker. Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded |
| | Blasting caps—(more than 1,000) (Show actual number) | Class A explosive | Explosive A | None | 173.66 | Forbidden | Forbidden | 6 | 5 | Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded |
| | Blasting caps—electric (1,000 or less) (Show actual number) | Class C explosive | Explosive C | None | 173.103 | Forbidden | Forbidden | 1,2 | 5 | Portable magazine or metal locker. Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded |
| | Blasting caps—electric (more than 1,000) (Show actual number) | Class A explosive | Explosive A | None | 173.66 | Forbidden | Forbidden | 6 | 5 | Magazine. Do not stow blasting caps with any high explosives. Do not handle blasting caps at the same time high explosives are being loaded |
| | Blasting caps with metal clad mild detonating fuse—(1,000 or less) (Show actual number) | Class C explosive | Explosive C | None | 173.103 | Forbidden | Forbidden | 1,2 | 5 | Portable magazine or metal locker. Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded |
| | Blasting caps with metal clad mild detonating fuse—(more than 1,000) (Show actual number) | Class A explosive | Explosive A | None | 173.66 173.67 | Forbidden | Forbidden | 6 | 5 | Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded |
| | Blasting caps with safety fuse—(1,000 or less) (Show actual number) | Class C explosive | Explosive C | None | 173.103 | Forbidden | Forbidden | 1,2 | 5 | Portable magazine or metal locker. Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded |
| | Blasting caps with safety fuse—(more than 1,000) (Show actual number) | Class A explosive | Explosive A | None | 173.66 173.67 | Forbidden | Forbidden | 6 | 5 | Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded |
| | Blasting gelatin. See High explosive | | | | | | | | | |
| | Blasting powder. See Black powder | | | | | | | | | |
| | Bleaching powder, containing 39% or less available chlorine | ORM-C | None | 173.505 | 173.920 | | | 1,2 | 1,2 | Keep dry. Stow separate from flammable liquids and acids. (Stow away from oils, grease, and similar organic materials) |
| | Bleaching powder, over 39% available chlorine | Oxidizer | Oxidizer | 173.153 | 173.217 | 50 pounds | 100 pounds | 1,2 | 1,2 | Keep cool and dry |
| | Boiler compound, liquid | Corrosive material | Corrosive | 173.244 | 173.249 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Bomb, explosive. See Explosive bomb | | | | | | | | | |

§172.101 Hazardous Materials Table (cont'd)

40697

| (1) * W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|---------------------|---|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|--|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | Bomb, explosive with gas, smoke, or incendiary material. See Explosive bomb | | | | | | | | | |
| | Bomb, fireworks. See Fireworks, special | | | | | | | | | |
| | Bomb, gas, smoke, or incendiary, non-explosive. See Chemical ammunition | | | | | | | | | |
| | Bomb, incendiary, or smoke without bursting charge. See Fireworks, special | | | | | | | | | |
| | Bomb, practice, with electric primer or electric squib (non-explosive) | | | 173.55 | | | | | | |
| | Bomb, sand-loaded or empty (non-explosive) | | | 173.55 | | | | | | |
| A | Bone oil | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| | Booster, explosive | Class A explosive | Explosive A | None | 173.69 | Forbidden | Forbidden | 6 | 5 | |
| | Bordeaux arsenite, liquid | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,2 | 1,2 | |
| | Bordeaux arsenite, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Boron tribromide | Corrosive material | Corrosive | None | 173.251 | Forbidden | 1 quart | 1 | 5 | |
| | Boron trichloride | Corrosive material | Corrosive | None | 173.251 | Forbidden | 1 quart | 1,2 | 5 | Stow in well ventilated space. Shade from radiant heat. Segregation same as for nonflammable gases |
| | Boron trifluoride | Nonflammable gas | Nonflammable gas and Poison | None | 173.302 | Forbidden | Forbidden | 1 | 5 | Stow away from living quarters and foodstuffs |
| | Boron trifluoride-acetic acid complex | Corrosive material | Corrosive | 173.244 | 173.247 | 1 quart | 1 gallon | 1,2 | 1,2 | |
| W | Bottles, having previously contained a hazardous material and not cleaned. See 173.29 | | | | | | | | | |
| | Box toe board (nitrocellulose base) | ORM-C | None | 173.505 | 173.925 | | | 1,3 | 1,3 | Provide cool stowage in a compartment having a temperature not exceeding 130 DEG F, well away from any sources of heat, and in position to protect or move, even to jettison in event of fire. Separate from explosives, flammable liquids or gases, oxidizing materials, organic peroxides, or corrosive liquids. |
| | Box toe gum | Combustible liquid | None | 173.118a | | | | 1,2 | 1,2 | |
| | Box toe gum | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Bromine | Corrosive material | Corrosive | None | 173.252 | Forbidden | 1 quart | 1 | 5 | Keep cool |
| | Bromine pentafluoride | Oxidizer | Oxidizer | None | 173.246 | Forbidden | 100 pounds | 1 | 5 | Shade from radiant heat. Segregation same as for corrosives |
| | Bromine trifluoride | Oxidizer | Oxidizer and Poison | None | 173.246 | Forbidden | 100 pounds | 1 | 5 | Shade from radiant heat. Segregation same as for corrosives |
| | Bromoacetic acid, solid | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1,2 | 1,2 | Keep dry |
| | Bromoacetic acid solution | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 quart | 1,2 | 1,2 | Glass carboys in hampers not permitted under deck |
| | Bromoacetone, liquid | Poison A | Poison gas | None | 173.329 | Forbidden | Forbidden | 1 | 5 | Segregation same as for flammable liquids |
| | Bromobenzene | Combustible liquid | None | 173.118a | | | | 1,2 | 1,2 | |
| | Bromotoluene, alpha. See Benzyl bromide | | | | | | | | | |
| | Brucine, solid (dimethoxy strychnine) | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| W | Burlap bags, cleaned (vacuum cleaned, wheel cleaned, or otherwise mechanically brushed). See Burlap cloth | | | | | | | | | |
| W | Burlap bags, new. See Burlap cloth | | | | | | | | | |
| AW | Burlap bags, used and unwashed, or not cleaned | ORM-C | None | 173.930 | | No limit | No limit | 1 | 1 | Keep cool |
| W | Burlap cloth (hessian) | ORM-C | None | 173.931 | | | | 1,2 | 1,2 | Keep dry. Stow away from organic liquids |
| | Burnt cotton, not repicked | Flammable solid | Flammable solid | None | 173.159 | Forbidden | Forbidden | 1 | 5 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| | Burnt fiber | Flammable solid | Flammable solid | None | 173.169 | Forbidden | Forbidden | 1,2 | 1,2 | Separate from flammable gases or liquids, oxidizing materials or organic peroxides |
| | Burster, explosive | Class A explosive | Explosive A | None | 173.69 | Forbidden | Forbidden | 6 | 5 | |
| | Butadiene, inhibited | Flammable gas | Flammable gas | 173.306 | 173.304 173.314 173.315 | Forbidden | Forbidden | 1,2 | 1 | Stow away from living quarters |
| | Butane or Liquefied petroleum gas. See Liquefied petroleum gas | | | | | | | | | |

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|----------------|--|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | Butyl acetate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | n-Butyl acid phosphate. <i>See</i> Acid butyl phosphate | | | | | | | | | |
| | Butyl alcohol. <i>See</i> Alcohol, n.o.s. | | | | | | | | | |
| | Butylamine | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Butyl bromide, <i>normal</i> | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Butyl chloride | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Butyl ether | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Butyl formate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | n-Butyl isocyanate | Flammable liquid | Flammable liquid and Poison | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Butyl mercaptan | Flammable liquid | Flammable liquid | None | 173.141 | Forbidden | 10 gallons | 1,3 | 5 | |
| | Butyl phosphoric acid. <i>See</i> Acid-butyl phosphate | | | | | | | | | |
| | Butyl trichlorosilane | Corrosive material | Corrosive | None | 173.280 | Forbidden | 10 gallons | 1 | 1 | Keep dry |
| | Butyraldehyde | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Butyric acid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Calcium arsenate, solid | Poison B | Poison | 173.364 | 173.367 173.368 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Calcium arsenite, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Calcium bisulfite solution. <i>See</i> Calcium hydrogen sulfite solution | | | | | | | | | |
| | Calcium carbide | Flammable solid | Flammable solid and dangerous when wet | None | 173.178 | Forbidden | 25 pounds | 1,2 | 1,2 | Keep dry. Stow away from copper, its alloys, and salts |
| | Calcium chlorate | Oxidizer | Oxidizer | 173.153 | 173.163 | 25 pounds | 100 pounds | 1,2 | 1,2 | Separate from ammonium compounds. Stow away from powdered metals and cyanides |
| | Calcium chlorite | Oxidizer | Oxidizer | None | 173.160 | Forbidden | 100 pounds | 1,2 | 1,2 | Separate from ammonium compounds powdered materials, and cyanides |
| AW | Calcium cyanamide, not hydrated, containing more than 0.1% calcium carbide | ORM-C | None | None | 173.945 | 25 pounds | 200 pounds | 1,2 | 1,2 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | Calcium cyanide, solid or Calcium cyanide mixture, solid | Poison B | Poison | 173.370 | | 25 pounds | 200 pounds | 1,2 | 1,2 | Stow away from corrosive liquids. Keep dry |
| | Calcium hydrogen sulfite solution | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 5 gallons | 1,2 | 1,2 | |
| | Calcium hypochlorite mixture, dry, (containing more than 39% available chlorine) | Oxidizer | Oxidizer | 173.153 | 173.217 | 50 pounds | 100 pounds | 1,2 | 1,2 | Keep cool and dry |
| | Calcium, metal | Flammable solid | Flammable solid and Dangerous when wet | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 4 | Keep cool and dry. Segregation same as for flammable solids labeled Dangerous When Wet |
| | Calcium, metal, crystalline | Flammable solid | Flammable solid and Dangerous when wet | None | 173.231 | Forbidden | 25 pounds | 1,2 | 5 | Keep cool and dry. Segregation same as for flammable solids labeled Dangerous When Wet |
| | Calcium nitrate (<i>See</i> Sec. 173.182 Note) | Oxidizer | Oxidizer | 173.153 | 173.182 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| AW | Calcium oxide | ORM-B | None | 173.505 | 173.350 | 25 pounds | 100 pounds | 1,2 | 1,2 | Keep dry. Stow away from explosives, acids, combustible materials, and am- monium salts |
| | Calcium permanganate | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 1,2 | Separate from ammonium compounds and hydrogen peroxide |
| | Calcium peroxide | Oxidizer | Oxidizer | 173.153 | 173.156 | 25 pounds | 100 pounds | 1,2 | 1,2 | Keep dry |
| | Calcium phosphide | Flammable solid | Flammable solid and Dangerous when wet | None | 173.161 | Forbidden | 25 pounds | 1 | 5 | Keep cool and dry. Segregation same as for flammable solids labeled Dangerous When Wet |
| | Calcium resinate | Flammable solid | Flammable solid | None | 173.166 | Forbidden | 125 pounds | 1 | 5 | |
| | Calcium resinate, fused | Flammable solid | Flammable solid | None | 173.166 | Forbidden | 125 pounds | 1 | 5 | |
| AW | Camphene | ORM-A | None | 173.505 | 173.610 | No limit | No limit | 1,3 | 1,3 | Stow away from foodstuffs and living quarters |
| | Camphor oil | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |

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|---------------------|--|------------------------|---|-------------------|---------------------------------|--|----------------------------------|------------------------|---------------------------------|--|
| | | | | (a) Exceptions | (b) Specific requirements | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | | | | | | | | | | |
| | Cannon primers | Class C explosive | Explosive C | None | 173.107 | 50 pounds | 150 pounds | 1,3 | 5 | |
| | Caprylyl peroxide solution | Organic peroxide | Organic peroxide | 173.153 | 173.221 | 1 quart | 1 quart | 1,2 | 4 | Keep cool. Stow separate from com- bustible materials, explosives, or acids |
| | <i>Caps, blasting. See Blasting caps</i> | | | | | | | | | |
| | <i>Caps, toy. See Toy caps</i> | | | | | | | | | |
| A | Carbaryl | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| | Carbolic acid, liquid or Phenol, liquid (liquid tar acid containing over 50% benzophenol) | Poison B | Poison | 173.345 | 173.349 | 1 quart | 55 gallons | 1,2 | 1,2 | |
| | Carbolic acid, or Phenol | Poison B | Poison | 173.364 | 173.369 | 50 pounds | 250 pounds | 1,2 | 1,2 | |
| | Carbon bisulfide, or Carbon disulfide | Flammable liquid | Flammable liquid | None | 173.121 | Forbidden | Forbidden | 1 | 5 | Keep cool. Not permitted on any vessel transporting explosives |
| | Carbon dioxide, liquefied | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.304 173.314 173.315 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Carbon dioxide-nitrous oxide mixture | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.304 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Carbon dioxide-oxygen mixture | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.304 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| AW | Carbon dioxide, solid, or Dry ice, or Carbonice | ORM-A | None | None | 173.615 | 440 pounds | 440 pounds | 1 | 1 | Stow away from open ventilators. Stow away from cyanides or cyanide mix- tures, liquid or dry |
| | Carbon monoxide | Flammable gas | Flammable gas | 173.306 | 173.302 | Forbidden | 150 pounds | 1 | 4 | |
| | Carbon remover, liquid | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| AW | Carbon tetrachloride | ORM-A | None | 173.505 | 173.620 | 1 quart | 55 gallons | 1,2 | 1,2 | Stow away from living quarters |
| | <i>Carbonyl chloride. See Phosgene</i> | | | | | | | | | |
| | <i>Carboys, empty, must be classed for the hazardous material previously contained in carboy. See 173.29</i> | | | | | | | | | |
| | Cartridge bags, empty, with black powder igniter | Class C explosive | Explosive C | None | 173.106 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Cartridge cases, empty, primed | Class C explosive | Explosive C | None | 173.107 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Cartridge, practice ammunition | Class C explosive | Explosive C | None | 173.101a | 50 pounds | 150 pounds | 1,2 | 1,2 | |
| | <i>Case oil. See Gasoline or Naphtha</i> | | | | | | | | | |
| | <i>Casinghead gasoline. See Gasoline</i> | | | | | | | | | |
| W | Castor beans | ORM-C | None | 173.505 | 173.952 | | | 1,2 | 1,2 | Stow away from living quarters and foodstuffs. Bulk shipments permitted in tight vans or containers only on cargo vessels (Castor beans only) |
| W | Castor pomace. <i>See</i> Castor beans | | | | | | | | | |
| | Caustic potash, dry, solid, flake, bead, or granular. <i>See</i> Potassium hydroxide, dry, etc. | | | | | | | | | |
| | Caustic potash, liquid or solution. <i>See</i> Potassium hydroxide solution | | | | | | | | | |
| | Caustic soda, dry, solid, flake, bead, or granular. <i>See</i> Sodium hydroxide, dry, etc. | | | | | | | | | |
| | Caustic soda, liquid or solution. <i>See</i> Sodium hydroxide solution | | | | | | | | | |
| W | Cellarolve. <i>See</i> Ethylene glycol monoethyl ether | | | | | | | | | |
| W | Cellarolve acetate. <i>See</i> Ethylene glycol monoethyl ether acetate | | | | | | | | | |
| | Cement, adhesive, n.o.s. <i>See</i> Cement, liquid, n.o.s. | | | | | | | | | |
| | Cement, container, linoleum, tile, or wallboard, liquid | Flammable liquid | Flammable liquid | 173.118 | 173.132 | 1 quart | 15 gallons | 1,2 | 1 | |
| | Cement, leather | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Cement, liquid, n.o.s. | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Cement, liquid, n.o.s. | Flammable liquid | Flammable liquid | 173.118 | 173.132 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Cement, pyroxylin | Flammable liquid | Flammable liquid | 173.118 | 173.132 | 1 quart | 15 gallons | 1,2 | 1 | |
| | Cement, roofing, liquid | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Cement, rubber | Flammable liquid | Flammable liquid | 173.118 | 173.132 | 1 quart | 15 gallons | 1,2 | 1 | |
| | Cesium metal | Flammable solid | Flammable solid and dangerous when wet | None | 173.206 | Forbidden | 25 pounds | 1,2 | 5 | Segregation same as for flammable solids labeled Dangerous When Wet |

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|----------------|---|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|--|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | | | | | | | | | | |
| * | Charcoal, activated | Flammable solid | Flammable solid | 173.162 | 173.162 | 25 pounds | 200 pounds | 1,3 | 1,3 | |
| | Charcoal briquettes or briquets | Flammable solid | Flammable solid | 173.162 | 173.162 | 50 pounds | 50 pounds | 1,2 | 1,2 | |
| | Charcoal screenings, made from "pinon" wood | Flammable solid | Flammable solid | 173.162 | 173.162 | 25 pounds | 200 pounds | 1,2 | 1,2 | |
| | Charcoal screenings, wet | Forbidden | | | | | | | | |
| | Charcoal, shell | Flammable solid | Flammable solid | 173.162 | 173.162 | 25 pounds | 200 pounds | 1,2 | 1,2 | |
| | Charcoal, wet | Forbidden | | | | | | | | |
| | Charcoal, wood, ground, crushed, granulated, or pulverized | Flammable solid | Flammable solid | 173.162 | 173.162 | 25 pounds | 200 pounds | 1,2 | 1,2 | |
| | Charcoal, wood, lump | Flammable solid | Flammable solid | 173.162 | 173.162 | 50 pounds | 50 pounds | 1,2 | 1,2 | |
| | Charcoal wood screenings, other than "pinon" wood screenings | Flammable solid | Flammable solid | None | 173.162 | Forbidden | Forbidden | 1 | 1 | |
| | Charged oil well jet perforating gun (total explosive contents in guns not exceeding 20 pounds per motor vehicle) | Class A explosive | Explosive A | None | 173.53 173.80 | Forbidden | Forbidden | | | Forbidden |
| | Charged oil well jet perforating gun (total explosive contents in guns not exceeding 20 pounds per motor vehicle) | Class C explosive | Explosive C | None | 173.53 173.110 | Forbidden | Forbidden | | | Forbidden |
| | Chemical ammunition explosive. See Ammunition, chemical, explosive | | | | | | | | | |
| | Chemical ammunition, nonexplosive (containing a Poison B material) | Poison B | Poison | 173.345 | 173.350 | Forbidden | 55 gallons | | | See correct shipping name of applicable Poison B material for stowage, special handling, and special segregation requirements |
| | Chemical ammunition, nonexplosive (containing an irritating material) | Irritating material | Irritant | None | 173.83 | Forbidden | 20 pounds | | | See correct shipping name of applicable irritant material for stowage, special handling, and special segregation requirements |
| | Chemical ammunition, nonexplosive (containing a poison A material) | Poison A | Poison gas | None | 173.330 | Forbidden | Forbidden | | | See correct shipping name of applicable Poison A material for stowage, special handling, and special segregation requirements |
| | Chemical kit | Corrosive material | Corrosive | 173.286 | | 1 quart | 1 quart | 1,3 | 1,3 | |
| | Chlorate and borate mixture (containing more than 28% chlorate) | Oxidizer | Oxidizer | 173.153 | 173.229 | 25 pounds | 100 pounds | 1,2 | 4 | Stow away from ammonium compounds and away from powdered metals |
| | Chlorate and magnesium chloride mixture (containing more than 28% chlorate) | Oxidizer | Oxidizer | 173.153 | 173.229 | 25 pounds | 100 pounds | 1,2 | 4 | Stow away from ammonium com- pounds, and away from powdered metals |
| | Chlorate explosive, dry. See High explosive | | | | | | | | | |
| W | Chlorate, n.o.s. | Oxidizer | Oxidizer | 173.153 | 173.163 | 25 pounds | 100 pounds | 1,2 | 4 | Stow away from ammonium compounds and away from powdered metals |
| | Chlorate, n.o.s., wet | Oxidizer | Oxidizer | 173.153 | 173.163 | 25 pounds | 200 pounds | 1,2 | 4 | Stow away from ammonium compounds and away from powdered metals |
| | Chlorate of potash. See Potassium chlorate | | | | | | | | | |
| | Chlorate of soda. See Sodium chlorate | | | | | | | | | |
| | Chlorate powder. See High explosive | | | | | | | | | |
| | Chloroacetic acid, solid | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1,2 | 1,2 | Keep dry |
| | Chloroacetic acid solution. See Monochloroacetic acid solution | | | | | | | | | |
| | Chloroacetophenone, gas, liquid, or solid (CN) | Irritating material | Irritant | None | 173.382 | Forbidden | 75 pounds | 1 | 5 | |
| | Chloroacetyl chloride | Corrosive material | Corrosive | None | 173.253 | Forbidden | 1 quart | 1 | 5 | Keep dry |
| | Chlorobenzene. See Chlorobenzol | | | | | | | | | |
| | Chlorobenzol | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Chlorine | Nonflamma- ble gas | Nonflamma- ble gas and Poison | None | 173.304 173.314 173.315 | Forbidden | Forbidden | 1,2 | 5 | Stow in a well-ventilated space. Stow away from organic materials |
| | Chlorine dioxide hydrate, frozen | Oxidizer | Oxidizer and Poison | None | 173.237 | Forbidden | Forbidden | | | Forbidden |
| | Chlorine trifluoride | Oxidizer | Oxidizer and Poison | None | 173.246 | Forbidden | 100 pounds | 1,3 | 5 | Stow in well ventilated area away from organic material |
| | Chloroacetic acid, solid | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1,2 | 1,2 | Keep dry |

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|----------------------|---|------------------------|---|-------------------|---------------------------------|---|----------------------------------|------------------------|----------------------------|---|
| | | | | (a) Exceptions | (b) Specific requirements | (a) Passenger carrying aircraft or railroad | (b) Cargo only aircraft | (a) Cargo vessel | (b) Passenger vessel | (c) Other requirements |
| AW | p-Chlorobenzoyl peroxide | Organic peroxide | Organic peroxide | None | 173.157 173.158 | Forbidden | 25 pounds | 1 | 1 | |
| | Chlorodinitrobenzene. See Dinitrochlorobenzene Chlorodinitrobenzol. See Dinitrochlorobenzol, solid | | | | | | | | | |
| A | Chloroform | ORM-A | None | 173.505 | 173.630 | 10 gallons | 55 gallons | 1,2 | 1,2 | Stow away from living quarters and foodstuffs |
| | 4-Chloro-o-toluidine hydrochloride | Poison B | Poison | None | 173.362 | Forbidden | 1 quart | 1,2 | 1,2 | |
| A | Chlorophenyltrichlorosilane | Corrosive material | Corrosive | None | 173.280 | Forbidden | 10 gallons | 1 | 1 | Keep dry |
| | Chloropicrin, absorbed | Poison B | Poison | None | 173.357 | Forbidden | Forbidden | 1 | 5 | Keep cool |
| A | Chloropicrin and methyl chloride mixture | Poison A | Flammable gas and Poison gas | None | 173.329 | Forbidden | Forbidden | 1 | 5 | Keep cool |
| | Chloropicrin and nonflammable, nonliquefied compressed gas mixture | Poison A | Nonflammable gas and Poison gas | None | 173.329 | Forbidden | Forbidden | 1 | 5 | Keep cool |
| A | Chloropicrin, liquid | Poison B | Poison | None | 173.357 | Forbidden | Forbidden | 1 | 5 | Keep cool |
| | Chloropicrin mixture (containing no compressed gas or poison A liquid) | Poison B | Poison | None | 173.357 | Forbidden | Forbidden | 1 | 5 | Keep cool |
| A | Chloroplatinic acid, solid | ORM-B | None | 173.505 | 173.510 173.800 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | 2-Chloropropene | Flammable liquid | Flammable liquid | None | 173.119 | Forbidden | 10 gallons | 1,2 | 5 | |
| A | Chlorosulfonic acid | Corrosive material | Corrosive | 173.244 | 173.254 | 1 quart | 1 quart | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| | Chlorosulfonic acid-sulfur trioxide mixture | Corrosive material | Corrosive | 173.244 | 173.254 | 1 quart | 1 quart | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| A | Chromic acid mixture, dry | Oxidizer | Oxidizer | 173.153 | 173.164 | 25 pounds | 100 pounds | 1,2 | 1,2 | Stow away from foodstuffs |
| | Chromic acid, solid | Oxidizer | Oxidizer | 173.153 | 173.164 | 25 pounds | 100 pounds | 1,2 | 1,2 | Stow away from foodstuffs. Stow separate from flammable liquids and solids |
| A | Chromic acid solution | Corrosive material | Corrosive | 173.244 | 173.287 | 1 quart | 1 gallon | 1 | 1 | |
| | Chromic anhydride. See Chromic acid, solid | | | | | | | | | |
| A | Chromic fluoride, solid | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Chromic fluoride solution | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 gallon | 1,2 | 1,2 | |
| A | Chromic trioxide. See Chromic acid, solid | | | | | | | | | |
| | Chromium oxychloride or Chromyl chloride | Corrosive material | Corrosive | None | 173.247 | Forbidden | 1 gallon | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| A | Cigar and cigarette lighter fluid. See lighter fluid | | | | | | | | | |
| | Cigarette lighter (or other similar ignition device) | Flammable gas | Flammable gas | 173.21 | 173.308 | 21 ounces | 25 pounds | 1 | 1 | Not permitted in nonventilated container |
| A | Cigarette lighter (or other similar ignition device) | Flammable liquid | Flammable liquid | 173.21 | 173.118 | Forbidden | Forbidden | 1 | 1 | Not permitted in nonventilated container |
| | Cigarette load | Class C explosive | Explosive C | None | 173.111 | 50 pounds | 150 pounds | 1,2 | 1,2 | |
| A | Cloud gas cylinder. See Chemical ammunition | | | | | | | | | |
| | Coal briquettes, hot | Forbidden | | | | | | | | |
| A | Coal facings. See Coal ground bituminous, etc. | | | | | | | | | |
| | Coal gas. See Hydrocarbon gas, nonliquefied | | | | | | | | | |
| A | Coal, ground bituminous, sea coal; coal facings, etc. | Flammable solid | Flammable solid | 173.169 | | Forbidden | Forbidden | 1 | 1 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| | Coal oil (export shipment only). See Kerosene | | | | | | | | | |
| A | Coal tar distillate | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Coal tar distillate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| A | Coal tar dye, liquid (not otherwise specifically named in Sec. 172.101) | Corrosive material | Corrosive | 173.244 | 173.245 173.249a | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Coal tar light oil | Combustible liquid | None | 173.118a | | | | 1,2 | 1,2 | |
| A | Coal tar light oil | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Coal tar naphtha | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |

| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|---|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|---------------------------|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | Coal tar naphtha | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Coal tar oil | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Coal tar oil | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Coating solution | Flammable liquid | Flammable liquid | 173.118 | 173.132 | 1 quart | 15 gallons | 1,2 | 1 | |
| | Cobalt resinate, precipitated | Flammable solid | Flammable solid | None | 173.166 | Forbidden | 125 pounds | 1,2 | 1,2 | |
| | Cocculus, solid (fishberry) | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| W* | Coconut meal pellets containing at least 6% and not more than 13% moisture and not more than 10% residual fat content | ORM-C | None | 173.505 | 173.955 | | | 1,2 | 4 | Keep dry |
| | Coal, hot | Forbidden | | | | | | | | |
| | Collodion | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Collodion cotton, wet. See Nitrocellulose, wet | | | | | | | | | |
| | Cologne spirits (alcohol) | Flammable liquid | Flammable liquid | 173.118 | 173.125 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Columbian spirits (wood alcohol) | Flammable liquid | Flammable liquid | 173.118 | 173.125 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Combination fuse | Class C explosive | Explosive C | None | 173.105 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Combination primer | Class C explosive | Explosive C | None | 173.107 | 50 pounds | 150 pounds | 1,3 | 5 | |
| | Combustible liquid, n.o.s. | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Commercial shaped charge. See High explosive | | | | | | | | | |
| | Common fireworks. See Fireworks, common | | | | | | | | | |
| | Compound, cleaning, liquid | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Compound, cleaning, liquid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 quart | 1,2 | 1,2 | |
| | Compound, cleaning, liquid | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Compound, cleaning, liquid (containing hydrochloric (muriatic) acid) | Corrosive material | Corrosive | 173.244 | 173.263 | 1 quart | 1 gallon | 1 | 1 | |
| | Compound, cleaning, liquid (containing hydrofluoric acid) | Corrosive material | Corrosive | 173.244 | 173.256 | 1 quart | 1 gallon | 1 | 4 | |
| | Compound, cleaning liquid (containing phosphoric acid, acetic acid, sodium or potassium hydroxide) | Corrosive material | Corrosive | 173.244 | 173.245 173.249a | 1 quart | 1 quart | 1,2 | 1,2 | |
| | Compound, enamel | Flammable liquid | Flammable liquid | 173.118 | 173.128 | 1 quart | 55 gallons | 1,2 | 1 | |
| | Compound, lacquer, paint, or varnish removing, liquid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 gallon | 1,2 | 1,2 | |
| | Compound, lacquer, paint, or varnish, removing, reducing, or thinning, liquid | Combustible liquid | None | 173.118a | | | | 1,2 | 1,2 | |
| | Compound, lacquer, paint, or varnish, removing, reducing, or thinning, liquid | Flammable liquid | Flammable liquid | 173.118 | 173.128 | 1 quart | 55 gallons | 1,2 | 1 | |
| | Compound, polishing, liquid | Flammable liquid | Flammable liquid | 173.118 | 173.129 | 1 quart | 55 gallons | 1,2 | 1 | |
| | Compound, rust preventing or Compound, rust removing | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 gallon | 1,2 | 1,2 | |
| | Compound, tree or weed killing, liquid | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Compound, tree or weed killing, liquid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 quart | 1,2 | 1,2 | |
| | Compound, tree or weed killing, liquid | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Compound, tree or weed killing, liquid | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,2 | 1,2 | |
| | Compound, tree or weed killing, solid | Oxidizer | Oxidizer | 173.153 | 173.154 173.229 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Compound, vulcanizing, liquid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 quart | 1,2 | 1,2 | |
| | Compound, vulcanizing, liquid | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Compound, water treatment, liquid. See Water treatment, liquid | | | | | | | | | |
| | Compressed gas, n.o.s. | Flammable gas | Flammable gas | 173.306 | 173.302 173.304 173.305 | Forbidden | 300 pounds | 1 | 4 | |

§172.101 Hazardous Materials Table (cont'd)

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| (1) Hazardous materials descriptions and proper shipping names | (2) Hazard class | (3) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|--|-------------------------|--|-----------------------|----------------------------------|---|--------------------------------|----------------------------|-----------------------------|---|
| | | | (a) Exceptions | (b) Specific requirements | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Passenger vessel | (c) Other requirements |
| | | | | | | | | | |
| Compressed gas, n.o.s. | Nonflammable gas | Nonflammable gas | 173.306 | 173.302 173.304 173.305 | 150 pounds | 300 pounds | 1.2 | 1.2 | Not subject to requirements of Part 176 |
| Consumer commodity | ORM-D | None | None | 173.510 173.1200 | 65 pounds gross | 65 pounds gross | | | |
| Container, reused or empty, must be classed for the hazardous material previously contained. See 173.28, 173.29 | Poison B | Poison | 173.364 | 173.367 | 50 pounds | 200 pounds | 1.2 | 1.2 | Stow away from acids |
| Copper acetoarsenite, solid (emerald green, imperial green, King's green, moss green, meadow green, milis green, parrot green, Vienna green) | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | |
| Copper arsenite, solid (Scheele's green, cupric green, copper orthoarsenite, Swedish green) | ORM-B | None | 173.505 | 173.510 173.800 | 25 pounds | 100 pounds | 1.2 | 1.2 | |
| Copper chloride | Poison B | Poison | 173.370 | | 25 pounds | 200 pounds | 1.2 | 1.2 | |
| Copper cyanide | ORM-C | None | 173.505 | 173.960 | | | 1.2 | 1.2 | Segregation same as for flammable solids. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| Copra | Class C explosive | Explosive C | None | 173.104 | 50 pounds | 300 pounds | 1.2 | 1.2 | |
| Copra pellets. See Coconut meal pellets | | | | | | | | | |
| Cordouan detonant fuse | | | | | | | | | |
| Corrosive battery fluid. See Electrolyte (acid), or Alkaline Corrosive battery fluid | Corrosive material | Corrosive | 173.244 | 173.245 173.245a | 1 quart | 1 quart | 1 | 4 | Keep dry |
| Corrosive liquid, n.o.s. | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1 | 4 | |
| Corrosive solid, n.o.s. | Combustible liquid | None | 173.118a | None | No limit | No limit | 1.2 | 1.2 | Segregation same as for flammable solids. See 176.900 to 176.904 |
| Cosmetics, n.o.s. | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1.2 | 1 | |
| Cosmetics, n.o.s. | Flammable solid | Flammable solid | 173.153 | 173.154 | 25 pounds | 100 pounds | 1.2 | 1.2 | Keep dry. Stow away from vegetable or animal oils. See 176.900 to 176.904 |
| Cosmetics, n.o.s. | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1.2 | 1.2 | |
| Cosmetics, n.o.s., liquid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 quart | 1.2 | 1.2 | Segregation same as for flammable solids. See 176.900 to 176.904 |
| Cosmetics, n.o.s., solid | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1.2 | 1.2 | |
| Cotton | ORM-C | None | 173.505 | 173.965 | | | 1.2 | 1.2 | Keep dry. Stow away from vegetable or animal oils. See 176.900 to 176.904 |
| Cotton batting | ORM-C | None | 173.505 | 173.970 | | | 1.2 | 1.2 | |
| Cotton batting dress. See Cotton batting | | | | | | | | | |
| Cotton, burnt. See Burnt cotton | | | | | | | | | |
| Cotton seed hull fiber or shavings, pulp, or cut liners. See Cotton batting | | | | | | | | | |
| Cotton sweepings. See Cotton waste | | | | | | | | | |
| Cotton wadding. See Cotton batting | | | | | | | | | |
| Cotton waste | ORM-C | None | 173.505 | 173.975 | | | 1.2 | 1.2 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| Cotton waste, oily (with more than 5% of animal or vegetable oil) | Flammable solid | Flammable solid | None | 173.167 | Forbidden | Forbidden | 1.2 | 1.2 | |
| Creosote, coal tar | Combustible liquid | None | 173.118a | None | No limit | No limit | 1.2 | 1.2 | Keep dry. Stow away from vegetable or animal oils. See 176.900 to 176.904 |
| Creosote oil. See Creosote, coal tar | | | | | | | | | |
| Crotonaldehyde | Flammable liquid | Flammable liquid and Poison | 173.118 | 173.119 | 1 quart | 1 gallon | 1.2 | 1 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| Crotonic acid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1.2 | 1.2 | |
| Crotonylene | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1.3 | 4 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| Crude nitrogen fertilizer solution (more than 25.3 p.p.s.g.) | Nonflammable gas | Nonflammable gas | 173.306 | 173.304 173.314 | Forbidden | 300 pounds | 1.3 | 1.3 | |
| Crude oil, petroleum | Combustible liquid | None | 173.118a | None | No limit | No limit | 1.2 | 1.2 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| Crude oil, petroleum | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1.2 | 1 | |
| Cumene hydroperoxide | Organic peroxide | Organic peroxide | 173.153 | 173.224 | 1 quart | 1 quart | 1.2 | 4 | |
| Cupric cyanide. See Copper cyanide | | | | | | | | | |

| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|--|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|--|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | | | | | | | | | | |
| | • Cupriethylene-diamine solution | Corrosive material | Corrosive | 173.244 | 173.249 | 1 quart | 1 gallon | 1,2 | 1,2 | |
| | • Cyanide or cyanide mixture, dry | Poison B | Poison | 173.364 | 173.370 | 25 pounds | 200 pounds | 1,2 | 1,2 | Keep dry. Stow away from acids |
| | Cyanogen bromide | Poison B | Poison | None | 173.379 | Forbidden | 25 pounds | 1 | 5 | Shade from radiant heat. Segregation same as for corrosive materials |
| | Cyanogen chloride containing less than 0.9% water | Poison A | Nonflam- mable gas and Poison Gas | None | 173.328 | Forbidden | Forbidden | 1 | 5 | Shade from radiant heat |
| | Cyanogen gas | Poison A | Flammable gas and Poison Gas | None | 173.328 | Forbidden | Forbidden | 1 | 5 | |
| | Cyclohexane | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,3 | 4 | |
| | Cyclohexanone peroxide, 50 to 85% peroxide | Organic peroxide | Organic peroxide | 173.157 | 173.158 | Forbidden | 25 pounds | 1 | 1 | |
| | Cyclohexanone peroxide, not over 50% peroxide | Organic peroxide | Organic peroxide | 173.153 | 173.154 | 2 pounds | 25 pounds | 1,2 | 1,2 | |
| | Cyclohexanone peroxide and bis (1-hydroxy cyclohexyl) peroxide mixture. See appropriate cyclohexanone peroxide entry immediately preceding | | | | | | | | | |
| | Cyclohexenyl trichlorosilane | Corrosive material | Corrosive | None | 173.280 | Forbidden | 10 gallons | 1 | 1 | Keep dry |
| | Cyclohexyl trichlorosilane | Corrosive material | Corrosive | None | 173.280 | Forbidden | 10 gallons | 1 | 1 | Keep dry |
| | Cyclopentane | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,3 | 4 | |
| | Cyclopentane, methyl | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,3 | 4 | |
| | Cyclopropane | Flammable gas | Flammable gas | 173.306 | 173.304 | Forbidden | 300 pounds | 1,2 | 1 | |
| | Cyclotrimethylenetrinitramine, desensitized. See High explosive | | | | | | | | | |
| | Cyclotrimethylenetrinitramine, wet with not less than 10% water. See High explosive | | | | | | | | | |
| | Cylinder, empty, including ton tanks, must be classed for the hazardous material previously contained in cylinder. See 173.29 | | | | | | | | | |
| | 2,4-D. See 2,4-Dichlorophenoxyacetic acid | | | | | | | | | |
| A | DDT or Dichlorodiphenyltrichloroethane | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| | Dead oil. See Creosote, coal tar | | | | | | | | | |
| | Decaborane | Flammable solid | Flammable solid and Poison | None | 173.236 | Forbidden | 25 pounds | 1,2 | 1,2 | |
| | Decahydronaphthalene | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Decalin. See Decahydronaphthalene | | | | | | | | | |
| | Delay electric igniter | Class C explosive | Explosive C | None | 173.106 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Denatured alcohol. See Alcohol, n.o.s. | | | | | | | | | |
| | Depth bomb. See Explosive bomb | | | | | | | | | |
| | Detonating fuze, Class A explosive, with or without radioactive components | Class A explosive | Explosive A | None | 173.69 | Forbidden | Forbidden | 6 | 5 | |
| | Detonating fuze, Class C explosive | Class C explosive | Explosive C | None | 173.113 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Detonating primer | Class A explosive | Explosive A | None | 173.68 | Forbidden | Forbidden | 6 | 5 | |
| | • Diacetone alcohol | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Diacetyl | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| A | Diazinon | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| | Diazodinitrophenol. See Initiating explosive | | | | | | | | | |
| A | Dibromodifluoromethane | ORM-A | None | 173.505 | 173.510 173.605 | 10 gallons | 55 gallons | | | |
| W | 1,2-Dibromoethane. See Ethylene dibromide | | | | | | | | | |
| | Dichloroacetic acid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 quart | 1,2 | 1,2 | Glass carboy in hampers not permitted under deck |
| | Dichloroacetyl chloride | Corrosive material | Corrosive | 173.244 | 173.247 | 1 quart | 1 gallon | 1 | 4 | Keep dry |
| A | Dichlorobenzene, ortho, liquid | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| A | Dichlorobenzene, para, solid | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |

§172.101 Hazardous Materials Table (cont'd)

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| (1) NFPA A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|------------------|---|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|--|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| A | Dichlorobutene | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Dichlorodifluoroethylene | ORM-A | None | 173.505 | 173.510 173.605 | 10 gallons | 55 gallons | | | |
| | Dichlorodifluoromethane | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.304 173.314 173.315 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Dichlorodifluoromethane and difluoroethane mixture (constant boiling mixture) | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.304 173.314 173.315 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Dichlorodifluoromethane- dichlorotetrafluoroethane mixture | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.304 173.314 173.315 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Dichlorodifluoromethane- monochlorodifluoromethane mixture | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.304 173.314 173.315 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Dichlorodifluoromethane- trichloromonofluoromethane mixture | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.304 173.314 173.315 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Dichlorodifluoromethane- trichloromonofluoromethane- monochloro difluoromethane mixture | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.304 173.314 173.315 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Dichlorodifluoromethane- trichlorotrifluoroethane mixture | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.304 173.314 173.315 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Dichlorodiphenyltrichloroethane. See DDT | | | | | | | | | |
| A | Dichloroethylene | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Dichloroisopropyl ether | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Dichloromethane or methylene chloride | ORM-A | None | 173.505 | 173.510 173.605 | 10 gallons | 55 gallons | | | |
| | Dichloropentane | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | 2,4-Dichlorophenoxyacetic acid | ORM-A | None | 173.505 | 173.510 | | | | | |
| | Dichlorophenyltrichlorosilane | Corrosive material | Corrosive | None | 173.280 | Forbidden | 10 gallons | 1 | 1 | Keep dry |
| | Dichloropropene and propylene dichloride mixture | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Dicumyl peroxide 50% solution | Organic peroxide | Organic peroxide | 173.153 | 173.224 | 1 quart | 1 quart | 1,2 | 4 | |
| | Dicumyl peroxide, dry | Organic peroxide | Organic peroxide | 173.153 | 173.154 | 2 pounds | 25 pounds | 1,2 | 1,2 | |
| | Dieldrin | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| A | Diesel Fuel See Fuel oil | | | | | | | | | |
| | Diethylamine | Flammable liquid | Flammable liquid | 173.118 | 173.119 | Forbidden | 5 pints | 1,3 | 4 | |
| | Diethyl cellosolve. See Ethylene glycol diethyl ether | | | | | | | | | |
| | Diethyl dichlorosilane | Flammable liquid | Flammable liquid | None | 173.135 | Forbidden | 10 gallons | 1 | 1 | Keep dry. Segregation same as for cor- rosives |
| | Diethylene glycol dinitrate See 173.51 | Forbidden | | | | | | | | |
| | Di-(2-ethylhexyl) phosphoric acid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Diethyl ketone | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | 1,1-Difluoro 1-chloroethane. See Difluoromonochloroethane | | | | | | | | | |
| | Difluoroethane | Flammable gas | Flammable gas | 173.306 | 173.304 173.314 173.315 | Forbidden | 300 pounds | 1,2 | 1 | |
| | Difluoromonochloroethane (1,1-difluoro 1-chloroethane) | Flammable gas | Flammable gas | 173.306 | 173.304 173.314 173.315 | Forbidden | 300 pounds | 1,2 | 1 | |
| A | Difluorophosphoric acid, anhydrous | Corrosive material | Corrosive | None | 173.275 | Forbidden | 1 gallon | 1,2 | 1,2 | |
| | Dihydropyran | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 4 | |
| | Diisobutyl ketone | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Diisooctyl acid phosphate | Corrosive material | Corrosive | 173.244 | 173.296 | 1 quart | 1 quart | 1,2 | 1,2 | Glass carboys in hampers not permitted under deck |
| | Diisopropylamine | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Diisopropylbenzene hydroperoxide solution, not over 60% peroxide | Organic peroxide | Organic peroxide | 173.153 | 173.224 | 1 quart | 1 quart | 1,2 | 4 | |
| | Diisopropylethanamine | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Diisopropylether | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,3 | 4 | |

| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|---|------------------------|---|--------------------|---------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific requirements | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | Dimethylamine, anhydrous | Flammable gas | Flammable gas | 173.306 | 173.304 173.314 173.315 | Forbid- den | 300 pounds | 1,2 | 4 | |
| | • Dimethylamine, aqueous solution | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | 2,3-Dimethylbutane | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,3 | 4 | |
| | Dimethyl carbonate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | 1,4-Dimethylcyclohexane | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Dimethyldichlorosilane | Flammable liquid | Flammable liquid | None | 173.135 | Forbid- den | 5 pints | 1,2 | 1 | |
| | Dimethyl ether | Flammable gas | Flammable gas | 173.306 | 173.304 173.314 173.315 | Forbid- den | 300 pounds | 1,2 | 1 | |
| | Dimethylhexane dihydroperoxide, dry | Forbidden | | | | | | | | |
| | Dimethylhexane dihydroperoxide, (with 30% or more water) | Organic peroxide | Organic peroxide | None | 173.157 | Forbid- den | 25 pounds | 1 | 1 | |
| | Dimethylhydrazine, unsymmetrical (UDMH) | Flammable liquid | Flammable liquid and Poison | None | 173.145 | Forbid- den | 5 pints | 1,2 | 1 | Keep dry. Separate from corrosive and oxidizing materials, and organic perox- ides |
| | Dimethyl sulfate | Corrosive material | Corrosive | None | 173.255 | Forbid- den | 1 quart | 1 | 5 | Keep cool |
| | Dimethyl sulfide | Flammable liquid | Flammable liquid | None | 173.119 | Forbid- den | 10 gallons | 1,2 | 5 | |
| | Dinitrobenzene, solid, or dinitrobenzol, solid | Poison B | Poison | 173.364 | 173.371 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | • Dinitrobenzene solution | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,2 | 1,2 | |
| | • Dinitrochlorobenzol, solid or Dinitro chlorobenzene | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| A | • Dinitrocyclohexylphenol | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| | • Dinitrophenol solution | Poison B | Poison | 173.345 | 173.362a | 1 quart | 65 pounds | 1,2 | 1,2 | Stow away from heavy metals and their compounds. If flash point is 141 DEG F or less segregation same as for flamma- ble liquids |
| | Dioxane | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Dioxolane | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Diphenylaminechlorosulfine (DM) | Irritating material | Irritant | None | 173.382 | Forbid- den | 75 pounds | 1 | 5 | |
| | Diphenyl dichlorosilane | Corrosive material | Corrosive | None | 173.280 | Forbid- den | 10 gallons | 1 | 1 | Keep dry |
| | Diphenyl methyl bromide, solid | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1 | 4 | |
| | • Diphenyl methyl bromide solution | Corrosive material | Corrosive | 173.244 | 173.247 | 1 quart | 1 gallon | 1,2 | 1,2 | |
| | Diphosgene. See Phosgene | | | | | | | | | |
| | • Disinfectant, liquid, n.o.s. | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | • Disinfectant, liquid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1 | 4 | |
| | • Disinfectant, liquid | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,2 | 1 | |
| | • Disinfectant, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1 | |
| | Dispersant Gas or Refrigerant Gas See 173.314 NOTE 13 and 173.315 NOTE 9 | | | | | | | | | |
| | • Distillate (petroleum or coal tar) | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Divinyl ether | Flammable liquid | Flammable liquid | None | 173.119 | Forbid- den | 10 gallons | 1,3 | 5 | |
| | Dodecyl trichlorosilane | Corrosive material | Corrosive | None | 173.280 | Forbid- den | 10 gallons | 1 | 1 | Keep dry |
| | • Dressing, leather | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | • Dressing, leather | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Drier. See Paint drier, liquid | | | | | | | | | |
| | Drill cartridge | | | | | | | | | |
| | • Drugs, n.o.s. | Combustible liquid | None | 173.55 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | • Drugs, n.o.s. | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | • Drugs, n.o.s. | Flammable solid | Flammable solid | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | • Drugs, n.o.s. | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | • Drugs, n.o.s., liquid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 quart | 1,2 | 1,2 | |

| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|--|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| • | Drugs, n.o.s., liquid | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,3 | 1 | Keep dry |
| • | Drugs, n.o.s., solid | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| • | Drugs, n.o.s., solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,3 | 1,3 | |
| | <i>Drugs, empty, must be classed for the hazardous material previously contained in drum. See 173.29</i> | | | | | | | | | |
| | <i>Dry ice. See Carbon dioxide, solid</i> | | | | | | | | | |
| | <i>Dusts, by-product, poisonous. See Arsenical dust</i> | | | | | | | | | |
| • | Dye intermediate, liquid | Corrosive material | Corrosive | 173.244 | 173.245 173.249a | 1 quart | 10 gallons | 1,2 | 1,3 | Stow away from foodstuffs and living quarters |
| | <i>Dynamite. See High explosive</i> | | | | | | | | | |
| | <i>Electric blasting caps. See Blasting caps, electric</i> | | | | | | | | | |
| | Electric squib | Class C explosive | Explosive C | None | 173.106 | 50 pounds | 150 pounds | 1,3 | 1,3 | Class carboys in hampers not permitted under deck |
| | Electric storage battery, wet. See Battery, electric storage, wet | | | | | | | | | |
| • | Electrolyte (acid), battery fluid (not over 47% acid) | Corrosive material | Corrosive | 173.244 | 173.257 | 1 quart | 5 gallons | 1,2 | 1,2 | |
| | Electrolyte (acid), or alkaline (corrosive) battery fluid packed with battery charger, radio current supply device, or electronic equipment and actuating device | Corrosive material | Corrosive | None | 173.259 | Forbidden | 5 pints | 1,2 | 1,2 | |
| | Electrolyte (acid), or alkaline (corrosive) battery fluid packed with dry-storage battery | Corrosive material | Corrosive | None | 173.258 | Forbidden | 5 pints | 1,2 | 1,2 | |
| | Empty cartridge bag with black powder igniter | Class C explosive | Explosive C | None | 173.106 | 50 pounds | 150 pounds | 1,3 | 1,3 | Not permitted in unventilated containers |
| | Empty cartridge case, primed | Class C explosive | Explosive C | None | 173.107 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| • | Enamel. See Paint, enamel, lacquer, etc. | | | | | | | | | |
| | Engine, internal combustion | | | 173.120 | | | | 1,2 | 1,2 | Not permitted in unventilated containers |
| | Engine starting fluid | Flammable gas | Flammable gas | None | 173.304 | Forbidden | 60 pounds | 1,2 | 5 | |
| • | Eradicator, paint or grease, liquid | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Etching acid, liquid, n.o.s. | Corrosive material | Corrosive | None | 173.299 | Forbidden | 10 pounds | 1 | 5 | Keep dry |
| | Ethane | Flammable gas | Flammable gas | 173.306 | 173.304 | Forbidden | 300 pounds | 1,2 | 4 | |
| | Ether (ethyl) | Flammable liquid | Flammable liquid | None | 173.119 | Forbidden | 10 gallons | 1,3 | 5 | |
| | Ether, Ethyl. See Ether | | | | | | | | | |
| | Ethyl acetate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Ethyl acrylate, inhibited | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Ethyl alcohol. See Alcohol, n.o.s. | | | | | | | | | |
| | Ethyl aldehyde. See Acetaldehyde | | | | | | | | | |
| | Ethyl benzene | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Ethyl borate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Ethyl butyl acetate | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | Segregation same as for flammable gases |
| | Ethyl butyl ether | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Ethyl butyraldehyde | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Ethyl butyrate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Ethyl chloride | Flammable liquid | Flammable liquid | None | 173.123 | Forbidden | 173.123 | 1,2 | 1 | |
| | Ethyl chloroacetate | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Ethyl chloroformate (chlorocarbonate) | Flammable liquid | Flammable liquid and Poison | None | 173.288 | Forbidden | 5 pints | 1,2 | 1 | |
| | Ethyl chlorothioformate | Corrosive material | Corrosive | 173.244 | 173.245 173.245a | 1 quart | 1 quart | 1,2 | 1 | |
| | Ethyl crotonate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Ethyl dichlorosilane | Flammable liquid | Flammable liquid | None | 173.135 | Forbidden | 5 pints | 1,2 | 1 | |

| (1) W/A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|------------|---|---------------------|--|-------------------|------------------------------|---|----------------------------|------------------------|-------------------------|---|
| | | | | (a) Exceptions | (b) Specific requirements | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Passenger vessel | (c) Other requirements |
| | | | | | | | | | | |
| AW | Ethylene | Flammable gas | Flammable gas | 173.306 | 173.304 | Forbidden | 300 pounds | 1,2 | 4 | Segregation same as for flammable liquids |
| | Ethylene chlorohydrin | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,2 | 1 | |
| | Ethylene dibromide (1,2-dibromethane) | ORM-A | None | 173.505 | 173.620 | 1 quart | 55 gallons | 1,2 | 1,2 | Stow away from living quarters |
| | Ethylene dichloride | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Ethylene glycol diethyl ether (<i>diethyl "Cellasolve"</i>) | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Ethylene glycol monoethyl ether (<i>"Cellasolve"</i>) | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Ethylene glycol monoethyl ether acetate (<i>"Cellasolve acetate"</i>) | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Ethylene glycol monomethyl ether (<i>methyl "Cellasolve"</i>) | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Ethylene glycol monomethyl ether acetate (<i>methyl "Cellasolve acetate"</i>) | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Ethylene imine, inhibited | Flammable liquid | Flammable liquid and Poison | None | 173.139 | Forbidden | 5 pints | 1,2 | 1 | |
| | Ethylene oxide | Flammable liquid | Flammable liquid | None | 173.124 | Forbidden | 173.124 | 1,2 | 1 | |
| | Ethyl ether. See Ethyl formate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,3 | 4 | Segregation same as for flammable gases |
| | Ethylhexaldehyde | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Ethyl lactate | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Ethyl mercaptan | Flammable liquid | Flammable liquid | None | 173.141 | Forbidden | 10 gallons | 1,2 | 1 | |
| | Ethyl methyl ether | Flammable liquid | Flammable liquid | None | 173.119 | Forbidden | 10 gallons | 1,3 | 1 | |
| | Ethyl methyl ketone | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Ethyl nitrate (<i>nitric ether</i>) | Flammable liquid | Flammable liquid | 173.118 | 173.119 | Forbidden | Forbidden | 1,2 | 1 | |
| | Ethyl nitrite (<i>nitrous ether</i>) | Flammable liquid | Flammable liquid | None | 173.119 | Forbidden | Forbidden | 1,3 | 5 | |
| | Ethyl phenyl dichlorosilane | Corrosive material | Corrosive | None | 173.280 | Forbidden | 10 gallons | 1 | 5 | |
| | Ethyl phosphonothioic dichloride, anhydrous | Corrosive material | Corrosive | 173.244 | 173.245 173.245a | 1 quart | 1 quart | 1 | 4 | Not permitted except under specific conditions approved by the Department. Stow away from organic, corrosive, or oxidizing materials. |
| | Ethyl phosphonous dichloride, anhydrous | Corrosive material | Corrosive | 173.244 | 173.245 173.245a | 1 quart | 1 quart | 1 | 4 | |
| | Ethyl phosphorodichloridate | Corrosive material | Corrosive | 173.244 | 173.245 173.245a | 1 quart | 1 quart | 1 | 4 | |
| | Ethyl propionate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Ethyl silicate (<i>tetra ethyl ortho silicate</i>) | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Ethyl trichlorosilane | Flammable liquid | Flammable liquid | None | 173.135 | Forbidden | 5 pints | 1,2 | 1 | |
| | Etiologic agent, n.o.s. | Etiologic agent | Etiologic agent | 173.386 | 173.387 | 173.386 | 4 liters | | | |
| | Excelsior (shredded wood) when dry, clear, and free from oil | ORM-C | None | 173.505 | 173.980 | | | 1,3 | 1,3 | |
| W | Exothermic ferrochrome | ORM-C | None | 173.505 | 173.985 | | | 1 | 1 | |
| W | Exothermic ferromanganese. See Exothermic ferrochrome | | | | | | | | | |
| W | Exothermic silicon chrome. See Exothermic ferrochrome | | | | | | | | | |
| W | Explosive auto alarm | Class C explosive | Explosive C | None | 173.111 | 50 pounds | 150 pounds | 1,2 | 1,2 | Magazine stowage authorized. No other cargo may be stowed in the same hold with these items. |
| | Explosive bomb | Class A explosive | Explosive A | None | 173.56 | Forbidden | Forbidden | 1,2 | 5 | |
| | Explosive cable cutter | Class C explosive | Explosive C | None | 173.102 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Explosive mine | Class A explosive | Explosive A | None | 173.56 | Forbidden | Forbidden | 1,2 | 5 | Magazine stowage authorized. No other cargo may be stowed in the same hold with this material. |
| | Explosive, new approval, and evaluation See 173.86 | | | | | | | | | |
| | Explosive power device, Class B | Class B explosive | Explosive B | None | 173.94 | Forbidden | 150 pounds | 1,2 | 5 | |
| | Explosive power device, Class C | Class C explosive | Explosive C | None | 173.102 | 50 pounds | 150 pounds | 1,3 | 1,3 | |

§172.101 Hazardous Materials Table (cont'd)

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| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|---|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Car vessel | (b) Pas- senger vessel | (c) Other requirements |
| | Explosive projectile | Class A explosive | Explosive A | None | 173.56 | Forbid- den | Forbid- den | 1,2 | 5 | Magazine stowage authorized. No other cargo may be stowed in the same hold with this material |
| | Explosive release device | Class C explosive | Explosive C | None | 173.102 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Explosive rivet | Class C explosive | Explosive C | None | 173.100 | 50 pounds | 150 pounds | 1,2 | 1,2 | |
| | Explosive, sample for laboratory examination | | | 173.86 | | Forbid- den | 173.86 | | | |
| | Explosive torpedo | Class A explosive | Explosive A | None | 173.56 | Forbid- den | Forbid- den | 1,2 | 5 | Magazine stowage authorized. No other cargo may be stowed in the same hold with this material |
| | • Extract, liquid, flavoring | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| AW | Fabric with animal or vegetable oil. See Fibers or fabric containing not more than 5% animal or vegetable fat Feed, wet, mixed | ORM-C | None | 173.505 | 173.990 | Forbid- den | Forbid- den | 3 | 3 | Stow in cool, dry, well ventilated com- partment. Do not stow bags over ten tiers high without flooring off. Do not overstow |
| W | Felt, waste. See Cotton waste Felt, waste, wet. See Waste wool, wet Ferric arsenate, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Ferric arsenite, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| A | Ferric chloride, solid, anhydrous | ORM-B | None | 173.505 | 173.510 | 25 pounds | 100 pounds | | | |
| | • Ferric chloride solution | Corrosive material | Corrosive | 173.244 | 173.245 173.245a | 1 quart | 10 quarts | 1,2 | 1,2 | |
| W | Ferrophosphorus | ORM-A | None | 173.505 | 173.635 | | | 1,2 | 1,2 | Keep dry. Stow away from living quar- ters |
| AW | Ferrosilicon, containing 30% or more but not more than 70% silicon | ORM-A | None | 173.505 | 173.510 173.645 | Forbid- den | 25 pounds | 1,2 | 1,2 | Keep dry. Stow away from living quar- ters. Segregation same as for flammable solids labeled Dangerous When Wet |
| | Ferrous arsenate (iron arsenate), solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Fertilizer ammoniating solution containing free ammonia (more than 25.3 p.p.i.g.) | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.304 173.314 | Forbid- den | 300 pounds | 1,2 | 4 | |
| W | Fertilizer, tankage. See Garbage, tankage Fibers (jute, hemp, flax, sisal, coir, kapok, and similar vegetable fibers) | ORM-C | None | 173.505 | 173.965 | | | 1,2 | 1,2 | Stow away from animal or vegetable oils. Segregation same as for flammable solids |
| | Fibers, burnt | Flammable solid | Flammable solid | None | 173.169 | Forbid- den | Forbid- den | 1,2 | 1,2 | |
| | Fibers or fabric, containing not more than 5% animal or vegetable oil | Flammable solid | Flammable solid | None | 173.170 | Forbid- den | Forbid- den | 1,2 | 1,2 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| | Film (nitrocellulose) | Flammable solid | Flammable solid | None | 173.177 | 50 pounds | 200 pounds | 1,3 | 1,3 | |
| | Film, photographic, (including scrap film), safety, nonflammable, or slow burning. Not subject to requirements of this subchapter | | | | | | | | | Stow away from other flammable cargo or substances |
| | Firecracker. See Fireworks, common or special | | | | | | | | | |
| | Firecracker salute. See Fireworks, common or special | | | | | | | | | |
| | • Fire extinguisher | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Fire extinguisher charge containing not more than 50 grains of propellant explosive per unit. Not subject to requirements of this subchapter | | | | | | | | | |
| | Fire extinguisher charge containing sulfuric acid | Corrosive material | Corrosive | 173.261 | | 1 quart | 1 gallon | 1,2 | 1,2 | |
| | Fireworks, common | Class C explosive | Explosive C | None | 173.100 173.108 | 50 pounds | 200 pounds | 1,3 | 1,3 | Passenger vessels in metal lockers only |
| | Fireworks, exhibition display piece. See Fireworks, special | | | | | | | | | |
| | Fireworks, special | Class B explosive | Explosive B | None | 173.88 173.91 | Forbid- den | 200 pounds | 3 | 3 | Passenger vessels in metal lockers only. Toy torpedoes must not be packed with other special fireworks |
| | | | | | | | | | | |

| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|--|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | | | | | | | | | | |
| W | Fish meal or fish scrap containing 6% to 12% water | ORM-C | None | 173.505 | 173.995 | | | 1,2 | 1,2 | Segregation same as for flammable solids. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. Use double strip stowage for cargo 6-12 percent moisture containing not more than 12 percent fat. Use single strip stowage for cargo 6-12 percent moisture containing 12-15 percent fat. |
| | Fish meal or fish scrap containing less than 6% or more than 12% water | Flammable solid | Flammable solid | None | 173.171 | Forbidden | Forbidden | 1,2 | 1,2 | |
| | Fissile radioactive material. See Radioactive material, fissile | | | | | | | | | |
| | Flame retardant compound liquid | Corrosive material | Corrosive | 173.244 | 173.291 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Flammable Gas n.o.s. See Compressed gas, n.o.s. | | | | | | | | | |
| | Flammable liquid, n.o.s. | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. |
| | Flammable solid, n.o.s. | Flammable solid | Flammable solid | 173.153 | 173.154 | 25 pounds | 25 pounds | 1,2 | 1,2 | |
| | Flare. See Fireworks, common | | | | | | | | | |
| | Flare, airplane. See Fireworks, special | | | | | | | | | |
| | Flash cartridge. See Fireworks, special or Low explosives | | | | | | | | | |
| | Flash cracker. See Fireworks, common or special | | | | | | | | | |
| | Flash powder. See Fireworks, special or Low explosives | | | | | | | | | |
| | Flax. See Fibers | | | | | | | | | |
| | Flexible linear shaped charge, metal clad | Class C explosive | Explosive C | None | 173.104 | 50 pounds | 300 pounds | 1,3 | 1,3 | |
| | Flowers of sulfur. See Sulfur | | | | | | | | | |
| | Fine dust, poisonous | Poison B | Poison | 173.364 | 173.368 | 50 pounds | 200 pounds | 1,2 | 1,2 | Stow in well ventilated space away from organic materials |
| | Fluoboric acid | Corrosive material | Corrosive | 173.244 | 173.283 | 1 quart | 1 gallon | 1,2 | 1,2 | |
| | Fluoric acid. See Hydrofluoric acid | | | | | | | | | |
| | Fluorine | Nonflammable gas | Poison and Oxidizer | None | 173.302 | Forbidden | Forbidden | 1 | 5 | |
| | Fluorophosphoric acid, anhydrous. See Monofluorophosphoric acid, anhydrous | | | | | | | | | |
| AW | Fluorosulfonic acid. See Hydrofluosulfonic acid | | | | | | | | | Keep dry |
| | Fluorosulfonic acid or Fluosulfonic acid | Corrosive material | Corrosive | None | 173.274 | Forbidden | 1 gallon | 1 | 5 | |
| | Formaldehyde, formalin solution (in containers of 110 gallons or less) ORM-A | | None | 173.505 | 173.510 | 10 gallons | 55 gallons | 1,2 | 4 | |
| | Formaldehyde, or formalin solution (in containers over 110 gallons) | Combustible liquid | None | 173.118a | None | 10 gallons | 55 gallons | 1,2 | 1,2 | |
| | Formalin. See Formaldehyde solution | | | | | | | | | |
| | Formic acid | Corrosive material | Corrosive | 173.244 | 173.245 173.289 | 1 quart | 5 gallons | 1,2 | 1,2 | Glass carboys in hampers not permitted under deck |
| | Formic acid solution | Corrosive material | Corrosive | 173.244 | 173.245 173.289 | 1 quart | 5 gallons | 1,2 | 1,2 | |
| | Fuel, aviation, turbine engine | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Fuel oil | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Fuel oil, Diesel. See Fuel oil | | | | | | | | | |
| | Fuel oil, No. 1, 2, 4 or 5 | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Fulminate of mercury, dry | Forbidden | | | | | | | | Glass carboys not permitted |
| | Fulminate of mercury, wet. See Initiating explosive | | | | | | | | | |
| | Fumaryl chloride | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 quart | 1 | 1 | |
| | Fumigant | | | | | | | | | |
| | Furfural | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1 | |
| | Fusee (railway or highway) | Flammable solid | Flammable solid | None | 173.154a | 50 pounds | 200 pounds | 1,3 | 1,3 | |
| | Fuse igniter | Class C explosive | Explosive C | None | 173.106 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Fuse, instantaneous | Class C explosive | Explosive C | 173.106 | | 50 pounds | 150 pounds | 1,2 | 1,2 | |
| | Fuse lighter | Class C explosive | Explosive C | None | 173.106 | 50 pounds | 150 pounds | 1,3 | 1,3 | |

§172.101 Hazardous Materials Table (cont'd)

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| (1) WJ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|---|------------------------|---|------------------|-------------------------------|---|---------------------------|------------------------|--------------------------|--|
| | | | | (a) | (b) | (a) | (b) | (a) | (b) | (c) Other requirements |
| | | | | Exceptions | Specific require- ments | Passenger carrying aircraft or railcar | Cargo only aircraft | Cargo vessel | Pass- enger vessel | |
| | Fusel oil | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Fuze, mild detonating, metal clad | Class C explosive | Explosive C | None | 173.104 | 50 pounds | 300 pounds | 1,2 | 1,2 | |
| | Fuze, safety | Class C explosive | Explosive C | 173.100 | | 50 pounds | 300 pounds | 1,2 | 1,2 | |
| | Fuze, combination | Class C explosive | Explosive C | None | 173.105 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Fuze, detonating | Class A explosive | Explosive A | None | 173.69 | Forbidden | Forbidden | 6 | 5 | |
| | Fuze, detonating, Class C explosive | Class C explosive | Explosive C | None | 173.113 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Fuze, detonating, radioactive | Class A explosive | Explosive A | None | 173.69 | Forbidden | Forbidden | 6 | 5 | |
| | Fuze, percussion | Class C explosive | Explosive C | None | 173.105 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Fuze, time | Class C explosive | Explosive C | None | 173.105 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Fuze, tracer | Class C explosive | Explosive C | None | 173.105 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| W | Garbage tankage containing 8% or more water | ORM-C | None | 173.505 | 173.1000 | | | 1,2 | 1,2 | |
| | Garbage tankage, containing less than 8% water | Flammable solid | Flammable solid | None | 173.209 | Forbidden | Forbidden | 1 | 1 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| | Gas cylinder, empty. See Cylinder, empty. | | | | | | | | | |
| | Gas drips, hydrocarbon | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Gas drips, hydrocarbon | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Gas identification set | Poison A | Poison gas | None | 173.331 | Forbidden | Forbidden | 1 | 5 | |
| | Gas identification set | Irritating material | Irritant | None | 173.331 | Forbidden | Forbidden | 1 | 5 | |
| | Gas mine. See Explosive mine | | | | | | | | | |
| | Gas oil. See Fuel oil | | | | | | | | | |
| | Gasoline (including casing-head and natural) | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 4 | |
| | Gelatine Dynamite. See High explosive | | | | | | | | | |
| | Germane | Poison A | Poison gas and Flammable gas | None | 173.328 | Forbidden | Forbidden | 1 | 5 | |
| | Grenade, empty, primed | Class C explosive | Explosive C | None | 173.107 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Grenade, hand or rifle, explosive (with or without gas, smoke, or incendiary material) | Class A explosive | Explosive A | None | 173.56 | Forbidden | Forbidden | 1,2 | 5 | No other cargo may be stowed in the same hold with these items |
| | Grenade, tear gas | Irritating material | Irritant | None | 173.385 | Forbidden | 75 pounds | 1,2 | 1 | |
| | Grenade without bursting charge: With incendiary material (Special fireworks) | Class B explosive | Explosive B | 173.91 | | Forbidden | Forbidden | 3 | 3 | Passenger vessels in metal lockers only |
| | Grenade without bursting charge: With smoke charge (Smoke grenade) | Class C explosive | Explosive C | 173.108 | | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Grenade without bursting charge: With Poison A gas charge | Poison A | Poison gas | 173.330 | | Forbidden | Forbidden | | | See correct shipping name of applicable Poison A material for stowage, special handling, and special segregation requirements |
| | Grenade without bursting charge: With Poison B charge | Poison B | Poison | 173.350 | | Forbidden | Forbidden | | | See correct shipping name of applicable Poison B material for stowage, special handling, and special segregation requirements |
| | Guanidine nitrate | Oxidizer | Oxidizer | 173.153 | 173.182 | 25 pounds | 100 pounds | 1,2 | 1,2 | Separate from nitro-compounds, chlorates, and acids |
| | Guanyl nitrosamino guanylidene hydrazine. See Initiating explosive | | | | | | | | | |
| | Guanyl nitrosamino guanyl tetrazene. See Initiating explosive | | | | | | | | | |
| | Guided missile, without warhead. See Rocket motor, Class A explosive or Rocket motor, class B explosive | | | | | | | | | |
| | Guided missile with warhead. See Rocket ammunition with explosive, illuminating, gas, incendiary, or smoke projectile | | | | | | | | | |
| | Gun cotton. See High explosive | | | | | | | | | |
| | Hafnium metal, dry (See Note 3, Sec. 173.214) | Flammable solid | Flammable solid | None | 173.214 | Forbidden | 75 pounds | 1 | 5 | |
| | Hafnium metal, wet | Flammable solid | Flammable solid | None | 173.214 | Forbidden | 150 pounds | 1,2 | 5 | |

| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|--|------------------------|---|-------------------|---------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific requirements | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | Hair, wet | Flammable solid | Flammable solid | None | 173.172 | Forbid- den | Forbid- den | 1,2 | 5 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| | Hand signal device | Class C explosive | Explosive C | None | 173.108 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| W | Hay | ORM-C | None | 173.505 | 173.1005 | | | 1,2 | 1,2 | Segregation same as for flammable solids. Stow away from animal or vegetable oils Forbidden for water shipment |
| W | Hay or straw (loose, wet, or damp) | | | | | | | | | |
| | Heater for refrigerator car, liquid fuel type (containing fuel) | Flammable liquid | Flammable liquid | 173.146 | | Forbid- den | Forbid- den | 1,2 | 1 | |
| | • Helium | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.302 173.314 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | • Helium-oxygen mixture | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.302 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Heptane | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| W | Hessian. See Burlap cloth | | | | | | | | | |
| W | Hexachloroethane | ORM-A | None | 173.505 | 173.650 | | | 1,2 | 1,2 | Keep dry |
| | Hexadecyltrichlorosilane | Corrosive material | Corrosive | None | 173.280 | Forbid- den | 10 gallons | 1 | 1 | |
| | Hexadiene | Flammable liquid | Flammable liquid | None | 173.119 | Forbid- den | 10 gallons | 1,2 | 5 | Shade from radiant heat |
| | Hexaethyl tetraphosphate and compressed gas mixture | Poison A | Poison gas | None | 173.334 | Forbid- den | Forbid- den | 1 | 5 | |
| | Hexaethyl tetraphosphate, liquid | Poison B | Poison | None | 173.358 | Forbid- den | 1 quart | 1 | 4 | |
| | Hexaethyl tetraphosphate mixture, dry (containing more than 2% hexaethyl tetraphosphate) | Poison B | Poison | None | 173.377 | Forbid- den | 200 pounds | 1,2 | 5 | |
| | • Hexaethyl tetraphosphate mixture, dry (containing not more than 2% hexaethyl tetraphosphate) | Poison B | Poison | 173.377 | 173.377 | 50 pounds | 200 pounds | 1,2 | 4 | |
| | Hexaethyl tetraphosphate mixture, liquid (containing more than 25% hexaethyl tetraphosphate) | Poison B | Poison | None | 173.359 | Forbid- den | 1 quart | 1,2 | 5 | |
| | • Hexaethyl tetraphosphate mixture, liquid (containing not more than 25% hexaethyl tetraphosphate) | Poison B | Poison | 173.359 | 173.359 | 1 quart | 1 quart | 1,2 | 4 | |
| | Hexafluorophosphoric acid | Corrosive material | Corrosive | None | 173.275 | Forbid- den | 1 gallon | 1,2 | 1,2 | |
| | Hexafluoropropylene | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.304 173.314 173.315 | 150 pounds | 300 pounds | 1 | 4 | |
| | • Hexaldehyde | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Hexamethylene diamine, solid | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | • Hexamethylene diamine solution | Corrosive material | Corrosive | 173.244 | 173.292 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Hexamethylene imine | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Hexane | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 4 | |
| | Hexanoic acid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Hexyltrichlorosilane | Corrosive material | Corrosive | None | 173.280 | Forbid- den | 10 gallons | 1 | 1 | Keep dry |
| | High explosive | Class A explosive | Explosive A | 173.65 | 173.61 to 173.87 | Forbid- den | Forbid- den | 6 | 5 | |
| | High explosive, liquid | Class A explosive | Explosive A | None | 173.62 | Forbid- den | Forbid- den | 6 | 5 | |
| | • Hydraulic accumulator. See Accumulator, pressurized | | | | | | | | | |
| | Hydrazine, anhydrous | Flammable liquid | Flammable liquid and Poison | None | 173.276 | Forbid- den | 5 pints | 1 | 5 | Segregation same as for corrosives |
| | • Hydrazine, aqueous solution | Corrosive material | Corrosive | None | 173.276 | Forbid- den | 5 pints | 1 | 5 | |
| | • Hydriodic acid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 gallon | 1 | 1 | Glass carboys not permitted on pas- senger vessel |
| | Hydrobromic acid, anhydrous. See Hydrogen bromide | | | | | | | | | |
| | Hydrobromic acid, more than 49% strength | Corrosive material | Corrosive | None | 173.262 | Forbid- den | Forbid- den | 1 | 1 | Glass carboys not permitted on pas- senger vessel |
| | • Hydrobromic acid not more than 49% strength | Corrosive material | Corrosive | 173.244 | 173.262 | 1 quart | 1 gallon | 1 | 1 | |
| | Hydrocarbon gas, liquefied | Flammable gas | Flammable gas | 173.306 | 173.304 173.314 | Forbid- den | 300 pounds | 1,2 | 1 | |
| | • Hydrocarbon gas, nonliquefied | Flammable gas | Flammable gas | 173.306 | 173.302 | Forbid- den | 300 pounds | 1,2 | 1 | |

§172.101 Hazardous Materials Table (cont'd)

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| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|--------------------|---|----------------------------|---|-----------------------|--|--|--------------------------------------|----------------------------|-------------------------------------|---|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | | | | | | | | | | |
| • | Hydrochloric (<i>muriatic</i>) acid Hydrochloric acid, anhydrous. See Hydrogen chloride | Corrosive material | Corrosive | 173.244 | 173.263 | 1 quart | 1 gallon | 1 | 1 | Glass carboys not permitted on pas- senger vessel |
| • | Hydrochloric acid mixture | Corrosive material | Corrosive | 173.244 | 173.263 | 1 quart | 1 gallon | 1 | 1 | Glass carboys not permitted on pas- senger vessel |
| • | Hydrochloric acid solution, inhibited | Corrosive material | Corrosive | 173.244 | 173.263 | 1 quart | 1 gallon | 1 | 1 | Glass carboys not permitted on pas- senger vessel |
| • | Hydrocyanic acid, liquefied | Poison A | Flammable gas and Poison gas | None | 173.332 | Forbid- den | Forbid- den | 1 | 5 | |
| • | Hydrocyanic acid (<i>prussic</i>), solution (5% or more hydrocyanic acid) | Poison A | Flammable gas and Poison gas | None | 173.332 | Forbid- den | Forbid- den | 1 | 5 | Shade from radiant heat. Aqueous solu- tions containing more than 20 percent hydrogen cyanide are not permitted in transportation by water |
| • | Hydrocyanic acid (<i>prussic</i>), unstabilized | Forbidden | | | | | | | | |
| • | Hydrocyanic acid solution, less than 5% hydrocyanic acid | Poison B | Poison | None. | 173.351 | Forbid- den | 25 pounds | 1 | 5 | |
| • | Hydrofluoric acid, anhydrous. See Hydrogen fluoride | | | | | | | | | |
| • | Hydrofluoric acid solution | Corrosive material | Corrosive | 173.244 | 173.264 | 1 quart | 1 gallon | 1 | 4 | |
| • | Hydrofluoric and sulfuric acids, mixture | Corrosive material | Corrosive | None | 173.290 | Forbid- den | 1 gallon | 1 | 5 | |
| • | Hydrofluoroboric acid. See Fluoboric acid | | | | | | | | | |
| • | Hydrofluorosilicic acid | Corrosive material | Corrosive | None | 173.265 | 1 quart | 1 gallon | 1,2 | 1,2 | |
| • | Hydrogen | Flammable gas | Flammable gas | 173.306 | 173.302 173.314 | Forbid- den | 300 pounds | 1,2 | 4 | |
| • | Hydrogen, cryogenic liquid or Liquefied | Flammable gas | Flammable gas | None | 173.316 | Forbid- den | Forbid- den | | | Forbidden |
| • | Hydrogen bromide | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.304 | Forbid- den | 300 pounds | 1 | 4 | |
| • | Hydrogen chloride | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.304 | Forbid- den | 300 pounds | 1 | 4 | |
| • | Hydrogen fluoride | Corrosive material | Corrosive | None | 173.264 | Forbid- den | 110 pounds | 1 | 5 | Segregation same as for nonflammable gases |
| • | Hydrogen iodide solution. See Hydriodic acid | | | | | | | | | |
| • | Hydrogen peroxide solution (8% to 40% peroxide) | Oxidizer | Oxidizer | 173.244 | 173.266 | 1 quart | 1 galloa | 1,2 | 1 | Shade from radiant heat. Separate from permanganates. Keep away from pow- dered metals |
| • | Hydrogen peroxide solution (40% to 52% peroxide) | Oxidizer | Oxidizer | 173.244 | 173.266 | Forbid- den | Forbid- den | 1 | 4 | Shade from radiant heat. Separate from permanganates. Keep away from pow- dered metals |
| • | Hydrogen peroxide solution (over 52% peroxide) | Oxidizer | Oxidizer | None | 173.266 | Forbid- den | Forbid- den | 1 | 5 | Shade from radiant heat. Separate from permanganates. Keep away from pow- dered metals. Concentrations greater than 60% hydrogen peroxide not per- mitted on any vessel except under con- ditions approved by the Department |
| • | Hydrogen selenide | Flammable gas | Flammable gas and Poison | None | 173.328 | Forbid- den | Forbid- den | 1 | 5 | |
| • | Hydrogen sulfate. See Sulfuric acid | | | | | | | | | |
| • | Hydrogen sulfide | Flammable gas | Flammable gas and Poison | None | 173.304 173.314 | Forbid- den | 300 pounds | 1 | 5 | |
| • | Hydrosilicofluoric acid. See Hydrofluorosilicic acid | | | | | | | | | |
| • | Hypochlorite solution containing more than 7% available chlorine by weight | Corrosive material | Corrosive | 173.244 | 173.277 | 1 quart | 4 gallons | 1,2 | 1 | Glass carboys in bampers not permitted under deck |
| • | Hypochlorite solution containing not more than 7% available chlorine by weight | ORM-B | None | 173.505 | 173.510 | No limit | No limit | | | |
| • | Igniter | Class C explosive | Explosive C | None | 173.106 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| • | Igniter cord | Class C explosive | Explosive C | None | 173.100 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| • | Igniter fuse, metal clad | Class C explosive | Explosive C | None | 173.106 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| • | Igniter, jet thrust (jato) | Class A explosive | Explosive A | None | 173.79 | Forbid- den | Forbid- den | 6 | 5 | |
| • | Igniter, jet-thrust (jato) | Class B explosive | Explosive B | None | 173.92 | Forbid- den | 550 pounds | 1,3 | 5 | |
| • | Igniter, rocket motor | Class A explosive | Explosive A | None | 173.79 | Forbid- den | Forbid- den | 6 | 5 | |
| • | Igniter, rocket motor | Class B explosive | Explosive B | None | 173.92 | Forbid- den | 550 pounds | 1,3 | 5 | |
| • | Illuminating projectile. See Fireworks, special | | | | | | | | | |

| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|--|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | Iminobispropylamine | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Initiating explosive <i>Diazodinitrophenol</i> | Class A explosive | Explosive A | None | 173.70 | Forbidden | Forbidden | 6 | 5 | |
| | Initiating explosive <i>Fulminate of mercury</i> | Class A explosive | Explosive A | None | 173.71 | Forbidden | Forbidden | 6 | 5 | |
| | Initiating explosive <i>Guanyl nitrosamine guanylidene hydrazine</i> | Class A explosive | Explosive A | None | 173.72 | Forbidden | Forbidden | 6 | 5 | |
| | Initiating explosive <i>Lead azide, dextrinated type only</i> | Class A explosive | Explosive A | None | 173.73 | Forbidden | Forbidden | 6 | 5 | |
| | Initiating explosive <i>Lead mononitrosorocinate</i> | Class A explosive | Explosive A | None | 173.70 | Forbidden | Forbidden | 6 | 5 | |
| | Initiating explosive <i>Lead styphnate (lead trinitrosorocinate)</i> | Class A explosive | Explosive A | None | 173.74 | Forbidden | Forbidden | 6 | 5 | |
| | Initiating explosive <i>Nitro mannite</i> | Class A explosive | Explosive A | None | 173.75 | Forbidden | Forbidden | 6 | 5 | |
| | Initiating explosive <i>Nitrosoguanidine</i> | Class A explosive | Explosive A | None | 173.76 | Forbidden | Forbidden | 6 | 5 | |
| | Initiating explosive <i>Pentaerythrite tetranitrate</i> | Class A explosive | Explosive A | None | 173.77 | Forbidden | Forbidden | 6 | 5 | |
| | Initiating explosive <i>Tetrazene (guanyl nitrosamine guanyl tetrazene)</i> | Class A explosive | Explosive A | None | 173.78 | Forbidden | Forbidden | 6 | 5 | |
| | Ink | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Ink | Flammable liquid | Flammable liquid | 173.118 | 173.144 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Insecticide, dry, n.o.s. | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Insecticide, liquefied gas (containing no Poison A or B material) | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.304 | 150 pounds | 300 pounds | 1,3 | 1,3 | |
| | Insecticide, liquefied gas, containing Poison A material or Poison B material | Poison A | Poison gas | None | 173.329 173.334 | Forbidden | Forbidden | 1 | 5 | Shade from radiant heat |
| | Insecticide, liquid, n.o.s. | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Insecticide, liquid, n.o.s. | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Insecticide, liquid, n.o.s. | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,2 | 1,2 | |
| | Insulation tape (varnished cloth type). See Oiled textiles | | | | | | | | | |
| | Iodine monochloride | Corrosive material | Corrosive | None | 173.293 | Forbidden | 1 quart | 1 | 5 | Keep dry |
| | Iodine pentafluoride | Oxidizer | Oxidizer and Poison | None | 173.246 | Forbidden | 100 pounds | 1 | 1 | Keep dry |
| | Iron chloride, solid. See Ferric chloride, solid | | | | | | | | | |
| | Iron mass or sponge, not properly oxidized | Flammable solid | Flammable solid | None | 173.174 | Forbidden | Forbidden | 1,2 | 5 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| | Iron mass or sponge spent | Flammable solid | Flammable solid | None | 173.174 | Forbidden | Forbidden | 1,2 | 5 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| | Iron, oxide, spent | | | | | | | | | |
| | Iron sesquichloride, solid. See Ferric chloride | | | | | | | | | |
| | Irritating agent, n.o.s. | Irritating material | Irritant | 173.382 | | Forbidden | 75 pounds | 1 | 1 | Stow away from living quarters |
| | Isobutane or Liquefied petroleum gas. See Liquefied petroleum gas | | | | | | | | | |
| | Isobutyl acetate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Isobutylamine | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Isobutylene or Liquefied petroleum gas. See Liquefied petroleum gas | | | | | | | | | |
| | Isobutyric acid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Isobutyric anhydride | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Isocetane | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Isocetene | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,3 | 4 | |
| | Isopentane | Flammable liquid | Flammable liquid | 173.118 | 173.119 | Forbidden | 10 gallons | 1,3 | 4 | |
| | Isopentanoic acid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Isoprene | Flammable liquid | Flammable liquid | 173.118 | 173.119 | Forbidden | 10 gallons | 1,3 | 4 | |
| | Isopropanol. See Alcohol, n.o.s. | | | | | | | | | |

§172.101 Hazardous Materials Table (cont'd)

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| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|---|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|--|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | | | | | | | | | | |
| | Isopropyl acetate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Isopropyl acid phosphate solid | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Isopropylamine | Flammable liquid | Flammable liquid | None | 173.119 | Forbid- den | 10 gallons | 1,3 | 5 | |
| | Isopropyl mercaptan | Flammable liquid | Flammable liquid | None | 173.141 | Forbid- den | 10 gallons | 1,3 | 5 | |
| | Isopropyl nitrate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Isopropyl percarbonate, stabilized | Organic peroxide | Organic peroxide | None | 173.282 | Forbid- den | Forbid- den | 5 | 5 | |
| | Isopropylpercarbonate, unstabilized | Organic peroxide | Organic peroxide | None | 173.218 | Forbid- den | Forbid- den | 5 | 5 | |
| | Isopropyl phosphoric acid, solid. See Isopropyl acid phosphate, solid | | | | | | | | | |
| | Jet thrust igniter. See Igniter, jet thrust | | | | | | | | | |
| | Jet thrust unit (Jatu) | Class A explosive | Explosive A | None | 173.79 | Forbid- den | Forbid- den | 6 | 5 | |
| | Jet thrust unit (Jatu) | Class B explosive | Explosive B | None | 173.92 | Forbid- den | 550 pounds | 1,3 | 5 | |
| W | Jute. See Fibers | | | | | | | | | |
| W | Kapok. See Fibers | | | | | | | | | |
| | Kerosene | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Lacquer. See *Paint, enamel, lacquer, stain, etc. | | | | | | | | | |
| | Lacquer base, liquid. See *Paint, enamel, lacquer, stain, etc. | | | | | | | | | |
| | Lacquer base, or lacquer chips, dry | Flammable solid | Flammable solid | 173.153 | 173.175 | 25 pounds | 100 pounds | 1 | 1 | |
| | Lacquer base or lacquer chips, plastic (wet with alcohol or solvent) | Flammable liquid | Flammable liquid | 173.118 | 173.127 | 1 quart | 25 pounds | 1,2 | 1 | |
| | Lacquer removing, reducing, or thinning compound. See Compound, lacquer, paint, or varnish, etc., removing, reducing or thinning liquid. | | | | | | | | | |
| | Lauroyl peroxide | Organic peroxide | Organic peroxide | 173.153 | 173.157 173.158 | 2 pounds | 25 pounds | 1,2 | 1 | |
| | Lead arsenate, solid | Poison B | Poison | 173.364 | 173.367 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Lead arsenite, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Lead azide. See Initiating explosive | | | | | | | | | |
| A | Lead chloride | ORM-B | None | 173.505 | 173.510 173.800 | 25 pounds | 100 pounds | 1,2 | 1,2 | Stow away from acids |
| | Lead cyanide | Poison B | Poison | 173.370 | | 25 pounds | No limit | 1,2 | 1,2 | |
| W | Lead dross | ORM-C | None | 173.503 | 173.1010 | | | 1,2 | 1,2 | Segregation same as for corrosive materials |
| | Lead mononitroresorcinate. See Initiating explosive | | | | | | | | | |
| | Lead nitrate | Oxidizer | Oxidizer | 173.153 | 173.182 | 25 pounds | 100 pounds | 1,2 | 1,2 | Stow away from foodstuffs |
| | Lead peroxide | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 1,2 | Stow away from foodstuffs |
| W | Lead scrap. See Lead dross | | | | | | | | | |
| | Lead stypmate (lead trinitroresorcinate). See Initiating explosive | | | | | | | | | |
| | Lead sulfate, solid (containing more than 3% free acid) | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Leather bleach or dressing | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Leather bleach or dressing | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Lighter fluid | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Lime-nitrogen. See Calcium cyanamide, not hydrated, etc. | | | | | | | | | |
| | Lime, unslaked. See Calcium oxide | | | | | | | | | |
| A | Lindane | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| | Liquefied hydrocarbon gas. See Hydrocarbon gas, liquefied | | | | | | | | | |
| | Liquefied nonflammable gas (charged with nitrogen, carbon dioxide, or air) | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.304 | 30 pounds | 30 pounds | 1,2 | 1,2 | |
| | Liquefied petroleum gas | Flammable gas | Flammable gas | 173.306 | 173.304 173.314 173.315 | Forbidden | 300 pounds | 1,2 | 1 | |

| (1) U W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|---------------------|---|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | <i>Liquid other than one classed as flammable, corrosive, poison or irritant, charged with nitrogen, carbon dioxide, or air. See Compressed gas n.o.s.</i> Lithium acetylacetylene diamine complex | Flammable solid | Flammable solid and Dangerous when wet | None | 173.206 | Forbidden | 25 pounds | 1,2 | 5 | Segregation same as for flammable solid labeled Dangerous When Wet |
| | Lithium aluminum hydride | Flammable solid | Flammable solid and Dangerous when wet | None | 173.206 | Forbidden | 25 pounds | 1,2 | 5 | Segregation same as for flammable solid labeled Dangerous When Wet |
| | Lithium aluminum hydride, ethereal | Flammable liquid | Flammable liquid | None | 173.137 | Forbidden | 1 quart | 1 | 5 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | Lithium amide, powdered | Flammable solid | Flammable solid | 173.153 | 173.168 | 25 pounds | 100 pounds | 1,2 | 4 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | Lithium borohydride | Flammable solid | Flammable solid and Dangerous when wet | None | 173.206 | Forbidden | 25 pounds | 1,2 | 5 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | Lithium ferro silicon | Flammable solid | Flammable solid and Dangerous when wet | None | 173.206 | Forbidden | 25 pounds | 1,2 | 5 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | Lithium hydride | Flammable solid | Flammable solid and Dangerous when wet | None | 173.206 | Forbidden | 25 pounds | 1,2 | 5 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | Lithium hydride in fused solid form | Flammable solid | Flammable solid and Dangerous when wet | None | 173.206 | Forbidden | 100 pounds | 1,2 | 5 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | Lithium hypochlorite compound, dry (containing more than 39% available chlorine) | Oxidizer | Oxidizer | 173.153 | 173.217 | 50 pounds | 100 pounds | 1,2 | 1,2 | |
| | Lithium metal | Flammable solid | Flammable solid and Dangerous when wet | None | 173.206 | Forbidden | 25 pounds | 1,2 | 5 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | Lithium metal, in cartridges | Flammable solid | Flammable solid and Dangerous when wet | 173.206 | | 1 pound | 25 pounds | 1,2 | 4 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | Lithium nitride | Flammable solid | Flammable solid and Dangerous when wet | None | 173.206 | Forbidden | 25 pounds | 1,2 | 5 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | Lithium peroxide | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 1,2 | Keep dry |
| | Lithium silicon | Flammable solid | Flammable solid and Dangerous when wet | None | 173.206 | Forbidden | 25 pounds | 1,2 | 1,2 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | London purple, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | <i>Low blasting explosive. See Low explosive</i> Low explosive | Class A Explosive | Explosive A | None | 173.60 | Forbidden | Forbidden | 6 | 5 | |
| | <i>Lye. See Sodium hydroxide, solid</i> Magnesium aluminum phosphide | Flammable solid | Flammable solid and Dangerous when wet | None | 173.206 | Forbidden | 25 pounds | 1,2 | 1,2 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | Magnesium arsenate, solid | Poison B | Poison | 173.364 | 173.367 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Magnesium dross, wet or hot | Forbidden | | 173.173 | | | | | | |
| | Magnesium, metal (powdered, pellets, turnings, or ribbons) | Flammable solid | Flammable solid and Dangerous when wet | 173.153 | 173.220 | 25 pounds | 100 pounds | 1,2 | 1,2 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | Magnesium nitrate | Oxidizer | Oxidizer | 173.153 | 173.182 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Magnesium perchlorate | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,3 | 1,3 | Stow away from powdered metals |
| | Magnesium peroxide, solid | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 1,2 | Keep dry |
| | Magnesium scrap (borings, clippings, shavings, sheet, turnings, or scalings) | Flammable solid | Flammable solid and Dangerous when wet | 173.153 | 173.220 | Forbidden | Forbidden | 1,2 | 1,2 | Segregation same as for flammable solids labeled Dangerous When Wet |
| A | Magnetized material | ORM-C | Magnetized material | None | 173.1020 | | | | | |
| A | Malathion | ORM-A | None | 173.505 | 173.510 | | | | | |

§172.101 Hazardous Materials Table (cont'd)

40657

| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|--|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | | | | | | | | | | |
| A | Manganese dioxide | ORM-B | None | 173.505 | 173.510 | | | | | |
| | Matches, black. See Matches, strike anywhere | | | | | | | | | |
| | Matches, safety, book, card, or strike-on-box | Flammable solid | Flammable solid | 173.176 | | 50 pounds | 50 pounds | 1.2 | 1 | |
| | Matches, strike anywhere | Flammable solid | Flammable solid | None | 173.176 | Forbidden | Forbidden | 1.2 | 1 | |
| | Matting acid. See Sulfuric acid | | | | | | | | | |
| | Medicines, n.o.s. | Combustible liquid | None | 173.118a | None | No limit | No limit | 1.2 | 1.2 | |
| | Medicines, n.o.s. | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1.2 | 1 | |
| | Medicines, n.o.s. | Flammable solid | Flammable solid | 173.153 | 173.154 | 25 pounds | 100 pounds | 1.2 | 1.2 | |
| | Medicines, n.o.s. | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1.2 | 1.2 | |
| | Medicines, n.o.s., liquid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 quart | 1.2 | 1.2 | |
| AW | Medicines, n.o.s., liquid | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1.3 | 1 | Keep dry |
| | Medicines, n.o.s., solid | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1.2 | 1.2 | |
| | Medicines, n.o.s., solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.3 | 1.3 | |
| | Menetrahdro phthalic anhydride | Corrosive material | Corrosive | None | 173.298 | Forbidden | 1 quart | 1.2 | 1 | |
| | Mercaptan mixture, aliphatic (in containers over 110 gallons) | Combustible liquid | None | 173.118a | | Forbidden | 10 gallons | 1.2 | 1.2 | |
| | Mercaptan mixture, aliphatic (in containers of 110 gallons or less) see 173.141(b) | ORM-A | None | 173.505 | 173.510 | Forbidden | 10 gallons | 1.3 | 5 | Stow in well ventilated space away from living quarters |
| | Mercaptan mixture, aliphatic | Flammable liquid | Flammable liquid | None | 173.141 | Forbidden | 10 gallons | 1.3 | 5 | |
| | Mercuric acetate | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | |
| | Mercuric ammonium chloride, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | |
| | Mercuric benzoate, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | |
| | Mercuric bromide, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | Stow away from acids |
| | Mercuric chloride, solid | Poison B | Poison | 173.364 | 173.372 | Forbidden | 25 pounds | 1.2 | 1.2 | |
| | Mercuric cyanide, solid | Poison B | Poison | 173.370 | | 25 pounds | 200 pounds | 1.2 | 1.2 | |
| | Mercuric iodide, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | |
| | Mercuric iodide solution | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1.3 | 1.2 | |
| | Mercuric oleate, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | Stow away from acids |
| | Mercuric oxide, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | |
| | Mercuric oxycyanide, solid | Poison B | Poison | 173.364 | 173.365 | 25 pounds | 200 pounds | 1.3 | 1.2 | |
| | Mercuric-potassium cyanide, solid | Poison B | Poison | 173.364 | 173.365 | 25 pounds | 200 pounds | 1.2 | 1.2 | |
| | Mercuric-potassium iodide, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | |
| | Mercuric salicylate solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | Stow away from acids |
| | Mercuric subsulfate, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | |
| | Mercuric sulfate, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | |
| | Mercuric sulfo cyanate, solid or mercuric thiocyanate, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | |
| | Mercuric, or mercury nucleate, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | |
| | Mercurous acetate, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | Stow away from acids |
| | Mercurous bromide, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | |
| | Mercurous gluconate, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | |
| | Mercurous iodide, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | |
| | Mercurous nitrate, solid | Oxidizer | Oxidizer | 173.153 | 173.154 | 50 pounds | 100 pounds | 1.2 | 1.2 | |
| | Mercurous oxide, black, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1.2 | 1.2 | |

| (1) * W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|---------------------|--|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|--|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | Mercurous sulfate, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Mercury compound, n.o.s., solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | <i>Mercury fulminate. See Initiating explosive</i> | | | | | | | | | |
| A | Mercury, metallic | ORM-B | None | None | 173.860 | 173.860 | 173.860 | | | |
| | Mesityl oxide | Flammable liquid | Flammable liquid | None | 173.119 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| W | Metal borings, shavings, turnings, or cuttings | ORM-C | None | 173.505 | 173.1025 | | | 1,2 | 1,2 | Keep dry. Not permitted if temperature of material is at or above 1300DEG F |
| | Methane | Flammable gas | Flammable gas | 173.306 | 173.302 | Forbid- den | 300 pounds | 1,2 | 4 | |
| | Methanol. <i>See</i> Methyl alcohol | | | | | | | | | |
| | Methyl acetate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Methyl acetone | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Methylacetylene-propadiene, stabilized | Flammable gas | Flammable gas | 173.306 | 173.304 173.314 173.315 | Forbid- den | 300 pounds | 1,2 | 1 | |
| | Methyl acrylate, inhibited | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Methylal | Flammable liquid | Flammable liquid | None | 173.119 | Forbid- den | 10 gallons | 1,3 | 5 | |
| | Methyl alcohol | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Methylamine, anhydrous or monomethylamine | Flammable gas | Flammable gas | 173.306 | 173.304 173.314 173.315 | Forbid- den | 300 pounds | 1 | 4 | |
| | Methyl amyl acetate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Methyl amyl ketone | Combustible liquid | None | 173.118a | | | | 1,2 | 1,2 | |
| | Methyl bromide and ethylene dibromide mixture, liquid | Poison B | Poison | None | 173.353 | Forbid- den | 55 gallons | 1 | 1 | |
| | Methyl bromide and more than 2% chloroform mixture, liquid | Poison B | Poison | None | 173.353 | Forbid- den | Forbid- den | 1 | 5 | Shade from radiant heat |
| | Methyl bromide and nonflammable, nonliquefied compressed gas mixture, liquid | Poison B | Poison | None | 173.353a | Forbid- den | 300 pounds | 1 | 5 | Stow away from living quarters |
| | Methyl bromide, liquid (<i>bromomethane</i>) (including up to 2% chloroform) | Poison B | Poison | None | 173.353 | Forbid- den | 55 gallons | 1 | 5 | Stow away from living quarters. Segregation same as for nonflammable gas |
| | Methyl butene | Flammable liquid | Flammable liquid | None | 173.119 | Forbid- den | 10 gallons | 1,2 | 5 | |
| | Methyl butyrate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | <i>Methyl cellosolve. See Ethylene glycol monomethyl ether</i> | | | | | | | | | |
| | <i>Methyl cellosolve acetate. See Ethylene glycol monomethyl ether acetate</i> | | | | | | | | | |
| | Methyl chloride | Flammable gas | Flammable gas | 173.306 | 173.304 173.314 173.315 | Forbid- den | 300 pounds | 1,2 | 4 | |
| | Methyl chloride-methylene chloride mixture | Flammable gas | Flammable gas | 173.306 | 173.304 173.314 | Forbid- den | 300 pounds | 1,2 | 4 | |
| | Methyl chloroformate. <i>See</i> Methyl chloroform | | | | | | | | | |
| A | Methyl chloroform | ORM-A | None | 173.505 | 173.510 173.605 | 10 gallons | 55 gallons | | | |
| | Methyl chloroformate | Flammable liquid | Flammable liquid and Poison | None | 173.288 | Forbid- den | 5 pints | 1,2 | 1 | |
| | Methylchloromethyl ether, anhydrous | Flammable liquid | Flammable liquid and Poison | None | 173.143 | Forbid- den | Forbid- den | 1 | 5 | Shade from radiant heat |
| | Methylcyclohexane | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Methylcyclopentane | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,3 | 4 | |
| | Methyl dichloroacetate | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 quart | 1,2 | 1,2 | |
| | Methyldichloroarsine | Poison A | Poison gas | None | 173.328 | Forbid- den | Forbid- den | 1 | 5 | Shade from radiant heat |
| | Methyl dichlorosilane | Flammable liquid | Flammable liquid | None | 173.136 | Forbid- den | 5 pints | 1,2 | 1 | |
| | Methylene chloride. <i>See</i> Dichloromethane | | | | | | | | | |
| | Methyl ethyl ether. <i>See</i> Ethyl methyl ether | | | | | | | | | |

§172.101 Hazardous Materials Table (cont'd)

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| (1) #/ W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|--------------------------|--|----------------------------|---|-----------------------|--|--|--------------------------------------|----------------------------|-------------------------------------|--|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | | | | | | | | | | |
| | Methyl ethyl ketone | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | Stow separate from oxidizing materials and corrosives |
| | Methyl ethyl pyridine | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Methyl formate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | Forbidden | 10 gallons | 1,3 | 4 | |
| | Methylfuran | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,3 | 4 | |
| | Methylhydrazine | Flammable liquid | Flammable liquid and Poison | None | 173.145 | Forbidden | 5 pints | 1,2 | 1 | |
| | Methyl isopropenyl ketone, inhibited | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Methyl magnesium bromide in ethyl ether not over 40% concentration | Flammable liquid | Flammable liquid | None | 173.149 | Forbidden | Forbidden | 1 | 1 | |
| | Methyl mercaptan | Flammable gas | Flammable gas | 173.306 | 173.304 173.314 173.315 | Forbidden | 300 pounds | 1,2 | 1 | |
| | Methyl methacrylate monomer, inhibited | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Methyl methacrylate monomer, uninhibited (high-purity, if acceptable under Sec. 173.21 of this subchapter) | Flammable liquid | Flammable liquid | 173.118 | 173.119 | Forbidden | Forbidden | 1,2 | 1 | |
| | Methyl norbornene dicarboxylic anhydride. See Methyltetrahydro phthalic anhydride | | | | | | | | | Segregation same as for flammable solids. Separate from flammable gases or liquids, oxidizing materials or organic peroxides |
| | Methyl parathion, liquid | Poison B | Poison | None | 173.358 | Forbidden | 1 quart | 1,3 | 1,3 | |
| | Methyl parathion mixture, dry | Poison B | Poison | 173.377 | 173.377 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Methyl parathion mixture, liquid, (containing 25% or less methyl parathion) | Poison B | Poison | None | 173.359 | 1/2 pint | 1 quart | 1,2 | 1,2 | |
| | Methyl parathion mixture, liquid, (containing over 25% methyl parathion) | Poison B | Poison | None | 173.359 | Forbidden | 1 quart | 1,2 | 1,2 | |
| | Methylpentadiene | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Methyl pentane | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Methyl phosphonothioic dichloride, anhydrous | Corrosive material | Corrosive | 173.244 | 173.245 173.245a | 1 quart | 1 quart | 1 | 4 | |
| | Methyl phosphonous dichloride | Corrosive material | Corrosive | 173.244 | 173.245 173.245a | 1 quart | 1 quart | 1 | 4 | |
| | Methyl propionate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Methyl propyl ketone | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | Glass carboys in hampers not permitted under deck |
| | Methyl sulfate. See Dimethyl sulfate | | | | | | | | | |
| | Methyl sulfide. See Dimethyl sulfide | | | | | | | | | |
| | Methyltrichlorosilane | Flammable liquid | Flammable liquid | None | 173.135 | Forbidden | 10 gallons | 1,2 | 1 | |
| | Methyl vinyl ketone, inhibited | Flammable liquid | Flammable liquid | 173.147 | 173.147 | 4 ounces | 10 gallons | 1,2 | 1 | |
| | Mild detonating fuse, metal clad. See Fuse, mild detonating, metal clad | | | | | | | | | |
| | Mine, empty See 173.55 | | | | | | | | | |
| | Mine, explosive, with gas material. See Explosive mine | | | | | | | | | |
| | Mine rescue equipment containing carbon dioxide | Nonflam- mable gas | Nonflam- mable gas | 173.306 | | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Mining reagent, liquid (containing 20% or more cresylic acid) | Corrosive material | Corrosive | 173.244 | 173.245 173.249a | 1 quart | 10 gallons | 1,2 | 1,2 | |
| A | Mipafox | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| | Mixed acid. See Nitrating (mixed) acid | | | | | | | | | |
| A | Molybdenum pentachloride | ORM-B | None | 173.505 | 173.510 173.500 | 25 pounds | 100 pounds | | | |
| | Monobromotrifluoromethane | Nonflam- mable gas | Nonflam- mable gas | 173.306 | 173.304 173.314 173.315 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Monochloroacetic acid solution | Corrosive material | Corrosive | 173.244 | 173.294 | 1 quart | 1 quart | 1,2 | 1,2 | |
| | Monochloroacetone | Forbidden | | | | | | | | |
| | Monochlorodifluoromethane | Nonflam- mable gas | Nonflam- mable gas | 173.306 | 173.304 173.314 173.315 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Monochloroethylene. See Vinyl chloride | | | | | | | | | |
| | Monochloropentafluoroethane | Nonflam- mable gas | Nonflam- mable gas | 173.306 | 173.304 | 150 pounds | 300 pounds | 1,2 | 1,2 | |

| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|--|------------------------|---|--|---------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific requirements | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | Monochlorotetrafluoroethane | Nonflam- mable gas | Nonflam- mable gas | 173.306 | 173.304 173.314 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Monochlorotrifluoromethane | Nonflam- mable gas | Nonflam- mable gas | 173.306 | 173.304 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Monothalamine | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | • Monoethanolamine solution | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Monothylamine | Flammable liquid | Flammable liquid | None | 173.148 | Forbid- den | 5 pints | 1,2 | 5 | Segregation same as for flammable gas |
| | Monofluorophosphoric acid, anhydrous | Corrosive material | Corrosive | None | 173.275 | Forbid- den | 1 gallon | 1,2 | 1,2 | Keep dry |
| | Monomethylamine, anhydrous | Flammable gas | Flammable gas | 173.306 | 173.304 173.314 173.315 | Forbid- den | 300 pounds | 1,2 | 4 | |
| | • Monomethylamine, aqueous solution | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,3 | 4 | Stow away from mercury and its com- pounds |
| | Mortar stains, liquid | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | • Mortar stains, liquid | Flammable liquid | Flammable liquid | 173.118 | 173.128 | 1 quart | 55 gallons | 1,2 | 1 | |
| | Moth balls. See Naphthalene | | | | | | | | | |
| | Motion picture film. See Film | | | | | | | | | |
| | Motor fuel antiknock compound or antiknock compound | Poison B | Poison | None | 173.354 | Forbid- den | 55 gallons | 1 | 5 | If flashpoint less than 141 deg F., segregation same as for flammable liquids |
| | • Motor fuel n.o.s. | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | • Motor fuel, n.o.s. | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Motor, internal combustion | | | 173.120 | | | | | | |
| | Motor vehicle, etc., including automobile, motorcycle, truck, tractor, and other self-propelled vehicle or equipment powered by internal combustion engine, when offered new or used for transportation and which contain fuel in the engine or fuel tank or the electric storage battery is connected to either terminal of the electrical system | ORM-C | None | 173.120 173.120 173.250 173.306 173.120 173.250 173.257 173.306 173.305 176.905 | | | | 1,2 | 1,2 | Not permitted in nonvented container |
| | Muriatic acid. See Hydrochloric (muriatic) acid | | | | | | | | | |
| | • Naphtha | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | • Naphtha | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | • Naphtha distillate | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | • Naphtha distillate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| AW | Naphthalene or Naphthalin | ORM-A | None | 173.505 | 173.655 | 25 pounds | 300 pounds | 1,2 | 1,2 | Segregation same as for flammable solids |
| | • Naphtha petroleum. See *Petroleum naphtha | | | | | | | | | |
| | • Naphtha, solvent | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | • Naphtha, solvent | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Natural gasoline. See Gasoline | | | | | | | | | |
| | Neohexane | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,3 | 4 | |
| | • Neon | Nonflam- mable gas | Nonflam- mable gas | 173.306 | 173.302 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | New explosive or explosive device | | | 173.51 | 173.86 | | | | | |
| | Nickel carbonyl | Flammable liquid | Flammable liquid and Poison | None | 173.126 | Forbid- den | Forbid- den | 1 | 5 | Not permitted on a vessel carrying ex- plosives. Shade from radiant heat. Segregation same as for flammable liquids in * |
| | Nickel catalyst, wet, finely divided, activated, or spent. With not less than 40% water or other suitable liquid | Flammable solid | Flammable solid | None | 173.233 | Forbid- den | 100 pounds | 1,2 | 1 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| | Nickel cyanide, solid | Poison B | Poison | 173.370 | | 25 pounds | 200 pounds | 1,2 | 1,2 | Stow away from acids |
| | Nicotine hydrochloride | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,2 | 1,2 | |
| | Nicotine, liquid | Poison B | Poison | None | 173.358 | Forbid- den | 55 gallons | 1,2 | 1,2 | |
| | Nicotine salicylate | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | • Nicotine sulfate, liquid | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,2 | 1,2 | |
| | Nicotine sulfate, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |

§172.101 Hazardous Materials Table (cont'd)

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| (1) * W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (If not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|---------------------|---|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | | | | | | | | | | |
| | Nicotine tartrate | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Nitrate of ammonia explosives. See High explosive | | | | | | | | | |
| | Nitrate, n.o.s. | Oxidizer | Oxidizer | 173.153 | 173.182 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Nitrating (mixed) acid | Oxidizer | Oxidizer | None | 173.267 | Forbidden | 1 quart | 1 | 5 | Segregation same as for corrosive materials |
| | Nitrating (mixed) acid, spent | Corrosive material | Corrosive | None | 173.248 | Forbidden | 1 quart | 1 | 5 | |
| | Nitric acid (over 40%) | Oxidizer | Oxidizer and Corrosive | None | 173.268 | Forbidden | 5 pints | 1 | 5 | Segregation same as for corrosive materials. Stow away from hydrazine, separate from diethylenetriamine |
| | Nitric acid, fuming | Oxidizer | Oxidizer and Poison | None | 173.268 | Forbidden | Forbidden | 1 | 5 | Segregation same as for corrosive materials. Stow away from hydrazine, separate from diethylenetriamine |
| | Nitric acid, 40% or less | Corrosive material | Corrosive | None | 173.268 | Forbidden | 5 pints | 1 | 5 | Stow away from hydrazine, separate from diethylenetriamine |
| | Nitric ether. See Ethyl nitrate | | | | | | | | | |
| | Nitric oxide | Poison A | Poison gas | None | 173.337 | Forbidden | Forbidden | 1 | 5 | |
| | Nitroaniline | Poison B | Poison | 173.364 | 173.373 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | p-Nitroaniline. See Nitroaniline | | | | | | | | | |
| | Nitrobenzol, liquid (all of nitrobenzene) | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,2 | 1,2 | |
| | Nitro carbo nitrate | Oxidizer | Oxidizer | 173.153 | 173.182 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Nitrocellulose, colloided, granular or flake, wet with not less than 20% alcohol or solvent, or block, wet with not less than 25% alcohol | Flammable liquid | Flammable liquid | 173.118 | 173.127 | 1 quart | 25 pounds | 1,3 | 1 | |
| | Nitrocellulose, colloided, granular or flake, wet with not less than 20% water | Flammable solid | Flammable solid | 173.153 | 173.184 | 25 pounds | 100 pounds | 1,3 | 1 | |
| | Nitrocellulose, dry. See High explosive | | | | | | | | | |
| | Nitrocellulose flakes, wet with not less than 20% alcohol or solvent | Flammable liquid | Flammable liquid | 173.118 | 173.127 | 1 quart | 25 pounds | 1,3 | 1 | |
| | Nitrocellulose, wet with not less than 30% alcohol or solvent | Flammable liquid | Flammable liquid | 173.118 | 173.127 | 1 quart | 25 pounds | 1,3 | 1 | |
| | Nitrocellulose, wet with not less than 20% water | Flammable solid | Flammable solid | 173.153 | 173.184 | 25 pounds | 100 pounds | 1,3 | 1 | |
| | Nitrochlorobenzene, ortho, liquid | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,2 | 1,2 | |
| | Nitrochlorobenzene, meta or para, solid | Poison B | Poison | 173.364 | 173.374 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Nitrogen | Nonflammable gas | Nonflammable gas | 173.306 | 173.302 173.314 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Nitrogen, cryogenic liquid or pressurized liquid | Nonflammable gas | Nonflammable gas | None | 173.304 | Forbidden | 300 pounds | 1,3 | 1,3 | |
| | Nitrogen dioxide, liquid | Poison A | Oxidizer and Poison gas | None | 173.336 | Forbidden | Forbidden | 1 | 5 | Segregation same as for nonflammable gases. Stow away from organic materials |
| | Nitrogen fertilizer solution | Nonflammable gas | Nonflammable gas | 173.306 | 173.304 173.314 | 150 pounds | 300 pounds | 1,3 | 1,3 | |
| | Nitrogen peroxide, liquid | Poison A | Oxidizer and Poison gas | None | 173.336 | Forbidden | Forbidden | 1 | 5 | Segregation same as for nonflammable gas. Stow away from organic materials |
| | Nitrogen tetroxide, liquid | Poison A | Oxidizer and Poison gas | None | 173.336 | Forbidden | Forbidden | 1 | 5 | Segregation same as for nonflammable gases. Stow away from organic materials |
| | Nitrogen tetroxide-nitric oxide mixture, containing up to 33.2% by weight nitric oxide | Poison A | Oxidizer and Poison gas | None | 173.338 | Forbidden | Forbidden | 1 | 5 | Segregation same as for nonflammable gases. Stow away from organic materials |
| | Nitroglycerin, liquid, desensitized. See High explosive, liquid | | | | | | | | | |
| | Nitroglycerin, liquid, undensitized. See 173.51 | Forbidden | | | | | | | | |
| | Nitroglycerin, spirits of. See Spirits of nitroglycerin | | | | | | | | | |
| | Nitroguanidine, dry. See High explosive | | | | | | | | | |
| | Nitroguanidine, wet with not less than 20% water | Flammable solid | Flammable solid | 173.153 | 173.184 | 25 pounds | 100 pounds | 1,2 | 4 | |
| | Nitrohydrochloric acid | Corrosive material | Corrosive | None | 173.278 | Forbidden | 5 pints | 1 | 5 | |
| | Nitrohydrochloric acid, diluted | Corrosive material | Corrosive | None | 173.278 | Forbidden | 5 pints | 1 | 5 | |
| | Nitromannite. See High explosive | | | | | | | | | |
| | Nitromethane | Flammable liquid | Flammable liquid | 173.118 | 173.149a | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Nitromuriatic acid. See Nitrohydrochloric acid | | | | | | | | | |

| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity, in one package | | (7) Water shipments | | |
|----------------|---|------------------------|---|-------------------|---------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific requirements | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | Nitrosoguanidine. See Initiating explosive | | | | | | | | | |
| | Nitrostarch, dry. See High explosive | | | | | | | | | |
| | Nitrostarch, wet with not less than 30% alcohol or solvent | Flammable liquid | Flammable liquid | 173.118 | 173.127 | 1 quart | 25 pounds | 1,2 | 1 | |
| | Nitrostarch, wet with not less than 20% water | Flammable solid | Flammable solid | 173.153 | 173.184 | 25 pounds | 100 pounds | 1 | 4 | |
| | Nitrosyl chloride | Nonflammable gas | Nonflammable gas | 173.306 | 173.304 173.314 | Forbidden | 300 pounds | 1 | 4 | |
| | Nitrourea. See High explosive | | | | | | | | | |
| | Nitrous oxide | Nonflammable gas | Nonflammable gas | 173.306 | 173.304 173.315 | 150 pounds | 300 pounds | 1,2 | 1,2 | Under deck stowage must be in well-ventilated space. |
| | Nitroxylol | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,2 | 1 | |
| | Nonflammable gas n.o.s. See Compressed Gas, n.o.s. | | | | | | | | | |
| | Nonliquefied hydrocarbon gas | Flammable gas | Flammable gas | 173.306 | 173.302 | Forbidden | 300 pounds | 1,2 | 1 | |
| | Nonyl trichlorosilane | Corrosive material | Corrosive | None | 173.280 | Forbidden | 10 gallons | 1 | 1 | Keep dry |
| W | Nordhausen acid. See Sulfuric acid | | | | | | | | | |
| | Oakum | ORM-C | None | 173.505 | 173.1030 | Forbidden | 10 gallons | 1,2 | 1,2 | Keep dry |
| | Octadecyltrichlorosilane | Corrosive material | Corrosive | None | 173.280 | Forbidden | 10 gallons | 1 | 1 | Keep dry |
| | Octane | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Octyl trichlorosilane | Corrosive material | Corrosive | None | 173.280 | Forbidden | 10 gallons | 1 | 1 | Keep dry |
| | Oil, described as oil, n.o.s., petroleum oil, or petroleum oil, n.o.s. | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Oil, described as oil, oil, n.o.s., petroleum oil, or petroleum oil, n.o.s. | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Oiled clothing (manufactured article properly dried to prevent spontaneous heating). See Oiled material | | | | | | | | | |
| AW | Oiled material (manufactured article properly dried to prevent spontaneous heating) | ORM-C | None | 173.505 | 173.1035 | No limit | No limit | 1,3 | 1,3 | |
| | Oiled paper (manufactured article properly dried to prevent spontaneous heating). See Oiled material | | | | | | | | | |
| | Oil of mirbane. See Nitrobenzol, liquid | | | | | | | | | |
| | Oil of vitriol. See Sulfuric acid | | | | | | | | | |
| | Oil well cartridge | Class C explosive | Class C explosive | None | 173.112 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Osolum (sulfuric acid fuming) | Corrosive material | Corrosive | None | 173.272 | Forbidden | 5 pints | 1,2 | 1 | Under deck stowage must be in metal drums only. Keep dry |
| | Organic peroxide, liquid, or solution, n.o.s. | Organic peroxide | Organic peroxide | 173.153 | 173.221 | Forbidden | 1 quart | 1,2 | 1,2 | Stow separate from combustible materials, explosives, or acids. |
| | Organic peroxide, solid, n.o.s. | Organic peroxide | Organic peroxide | 173.153 | 173.154 | Forbidden | 25 pounds | 1,2 | 1,2 | Stow separate from combustible materials, explosives, or acids. |
| | Organic Peroxide liquid or solution, n.o.s. | Flammable liquid | Organic peroxide and flammable liquid | None | 173.119 | Forbidden | 1 quart | 1,2 | 5 | Stow separate from combustible materials, explosives, or acids |
| | Organic phosphate compound mixture, dry | Poison B | Poison | 173.377 | 173.377 | 50 pounds | 200 pounds | 1,2 | 4 | |
| | Organic phosphate compound mixture, liquid | Poison B | Poison | None | 173.359 | Forbidden | 1 quart | 1,2 | 5 | |
| | Organic phosphate, liquid | Poison B | Poison | None | 173.358 | Forbidden | 1 quart | 1,2 | 5 | |
| | Organic phosphate, mixed with compressed gas | Poison A | Poison gas | None | 173.334 | Forbidden | Forbidden | 1 | 5 | Shade from radiant heat |
| | Organic phosphorus compound, liquid, or Organic phosphate, liquid | Poison B | Poison | None | 173.358 | Forbidden | 1 quart | 1,2 | 5 | |
| | Organic phosphorus compound, solid, or Organic phosphate compound dry, n.o.s. | Poison B | Poison | None | 173.377 | Forbidden | 200 pounds | 1,2 | 4 | |
| | Organic phosphorus compound mixture, liquid, or Organic phosphate compound mixture, liquid | Poison B | Poison | 173.359 | 173.359 | 1/2 pint | 1 quart | 1,2 | 5 | |
| | Organic phosphorus compound mixture, dry, or Organic phosphate compound mixture, dry | Poison B | Poison | 173.377 | 173.377 | 50 pounds | 200 pounds | 1,2 | 4 | |
| AW | ORM-A n.o.s. | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| AW | ORM-B n.o.s. | ORM-B | None | 173.503 | 173.510 | No limit | No limit | | | |
| | ORM-C. See 173.500 & 176.900 | | | | | | | | | |
| | Orthonitroaniline. See Nitroaniline | | | | | | | | | |
| | Oxidizer, or Oxidizing material, n.o.s. | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 25 pounds | 1,2 | 1,2 | |
| | Oxidizer material packed with other articles See 173.152 | | | | | | | | | |

§172.101 Hazardous Materials Table (cont'd)

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| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|---|------------------------|---|------------------|-------------------------------|---|---------------------------|------------------------|--------------------------|--|
| | | | | (a) | (b) | (a) | (b) | (a) | (b) | (c) Other requirements. |
| | | | | Exceptions | Specific require- ments | Passenger carrying aircraft or railcar | Cargo only aircraft | Cargo vessel | Pass- enger vessel | |
| • | Oxygen | Nonflamma- ble gas | Oxidizer | 173.306 | 173.302 | 150 pounds | 300 pounds | 1,2 | 1,2 | Under deck stowage must be in well ventilated space Stow separate from acetylene. Do not overstow with other cargo |
| • | Oxygen, pressurized liquid | Nonflamma- ble gas | Oxidizer | None | 173.314 173.304 | Forbidden | Forbidden | 1,3 | 1,3 | |
| • | Paint drier, liquid | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| • | Paint drier, liquid | Flammable liquid | Flammable liquid | 173.118 | 173.128 | 1 quart | 55 gallons | 1,2 | 1 | |
| • | Paint, enamel, lacquer, stain, shellac, or varnish; aluminum, bronze, gold, wood filler, liquid or lacquer base, liquid | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| • | Paint, enamel, lacquer, stain, shellac, or varnish; aluminum, bronze, gold, wood filler, liquid, or lacquer base, liquid | Flammable liquid | Flammable liquid | 173.118 | 173.128 | 1 quart | 55 gallons | 1,2 | 1 | |
| • | Paint, reducing or thinning compound. See *Compound, lacquer, paint, or varnish, reducing or thinning liquid, etc. Paper caps. See Toy caps | ORM-C | None | 173.505 | 173.1075 | | | 1,2 | 1,2 | |
| W | Paper scrap (when dry, clean, and free from oil) | Flammable solid | Flammable solid | None | 173.185 | Forbidden | Forbidden | 1,2 | 1,2 | |
| | Paper stock, wet | | | | | | | | | |
| | Paper waste (when dry, clean, and free from oil). See Paper scrap | | | | | | | | | |
| | Paper waste, wet. See Waste paper, wet | | | | | | | | | |
| | Paramenthane hydroperoxide | Organic peroxide | Organic peroxide | 173.153 | 173.224 | 1 quart | 1 quart | 1,2 | 4 | Segregation same as for flammable solids. Separate from flammable gases or liquids, oxidizing materials, or or- ganic peroxides |
| | Paranitroaniline, solid. See Nitroaniline | Poison A | Poison gas | None | 173.334 | Forbidden | Forbidden | 1,3 | 5 | |
| | Parathion and compressed gas mixture | Poison B | Poison | None | 173.358 | Forbidden | 1 quart | 1,3 | | |
| | Parathion, liquid | Poison B | Poison | 173.377 | 173.377 | 50 pounds | 200 pounds | 1,3 | 1,3 | |
| • | Parathion mixture, dry | Poison B | Poison | None | 173.359 | Forbidden | 1 quart | 1,3 | 1,3 | Segregation same as for flammable solids. Separate from flammable gases or liquids, oxidizing materials, or or- ganic peroxides |
| | Parathion mixture, liquid | | | | | | | | | |
| | Paris green, solid. See Copper acetoarsenite, solid | | | | | | | | | |
| | Pentaborane | Flammable liquid | Poison and flammable liquid | None | 173.138 | Forbidden | Forbidden | 1 | 5 | |
| | Pentaerythrite tetranitrate. See Initiating explosive | | | | | | | | | |
| | Pentaerythrite tetranitrate, desensitized, wet. See High explosive | | | | | | | | | |
| | Pentane | Flammable liquid | Flammable liquid | 173.118 | 173.119 | Forbidden | 10 gallons | 1,3 | 4 | Shade from radiant heat |
| | Pentolite, dry. See High explosive | | | | | | | | | |
| | Peracetic acid solution, not over 40% peracetic acid and not over 6% hydrogen peroxide | Organic peroxide | Organic peroxide | 173.223 | 173.223 | 1 pint | 5 pints | 1 | 4 | |
| • | Perchlorate, n.o.s. | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,3 | 1,3 | |
| | Perchloric acid, exceeding 50% but not exceeding 72% strength | Oxidizer | Oxidizer | None | 173.269 | Forbidden | 5 pints | 1 | 5 | Segregation same as for corrosive materials. Stow away from hydrazine |
| | Perchloric acid exceeding 72% strength | Forbidden | Oxidizer | 173.244 | 173.269 | Forbidden | 5 pints | 1 | 1 | |
| • | Perchloric acid, not over 50% acid | Oxidizer | Oxidizer | 173.244 | 173.269 | Forbidden | 5 pints | 1 | 1 | |
| | Perchloro-methyl-mercaptan | Poison B | Poison | 173.345 | 173.360 | Forbidden | 10 pounds | 1 | 4 | |
| | Percussion cap | Class C explosive | Explosive C | None | 173.107 | 50 pounds | 150 pounds | 1,3 | 1,3 | Segregation same as for corrosive materials. Stow away from hydrazine |
| | Percussion fuze | Class C explosive | Explosive C | None | 173.105 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| A | Perfluoro-2-butene | ORM-A | None | 173.505 | 173.510 173.605 | 10 gallons | 55 gallons | | | |
| • | Permanganate, n.o.s. | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Potassium permanganate. See Potassium permanganate | | | | | | | | | |
| • | Peroxide, organic. See Organic Peroxide | | | | | | | | | |
| W | Pesticide, water reactive, including but not limited to fungicides, and herbicides, etc., which contain manganese ethylenbis(dithio) carbamate | ORM-C | None | 173.505 | 173.1040 | | | 2 | 2 | Keep dry |
| W | Petroleum coke (uncalcined) | ORM-C | None | 173.505 | 173.1045 | | | 1,2 | 1,2 | Not permitted if temperature of materi- al is at or above 130 deg F. |
| | Petroleum crude. See Crude oil | | | | | | | | | |

| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|---|------------------------|---|------------------|-------------------------------|---|---------------------------|------------------------|--------------------------|---|
| | | | | (a) | (b) | (a) | (b) | (a) | (b) | (c) Other requirements |
| | | | | Exceptions | Specific require- ments | Passenger carrying aircraft or railcar | Cargo only aircraft | Cargo vessel | Pass- enger vessel | |
| | Petroleum distillate | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Petroleum distillate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,3 | 4 | |
| | Petroleum ether | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,3 | 4 | |
| | Petroleum gas, liquefied. See Liquefied petroleum gas | | | | | | | | | |
| | Petroleum naphtha | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Petroleum naphtha | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| A | Phenacpton | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| | Phenol. See Carbolic acid | | | | | | | | | |
| | Phenyl dichloro arsine | Poison B | Poison | None | 173.355 | Forbidden | 30 gallons | 1 | 5 | |
| A | Phenylenediamine, meta or para, solid | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| | Phenyl trichlorosilane | Corrosive material | Corrosive | None | 173.280 | Forbidden | 10 gallons | 1 | 1 | Keep dry |
| | Phosgene (diphosgene) | Poison A | Poison gas | None | 173.333 | Forbidden | Forbidden | 1 | 5 | |
| | Phosphine | Poison A | Flammable gas and Poison gas | None | 173.328 | Forbidden | Forbidden | 1 | 5 | |
| | Phosphoric acid or Phosphoric Acid Solution | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | Glass carboys in hampers not permitted under deck |
| | Phosphoric acid triethyleneimine. See Tri-(1-aziridinyl phosphine oxide) | | | | | | | | | |
| | Phosphoric anhydride (phosphorus pentoxide) | Corrosive material | Corrosive | None | 173.188 | Forbidden | 100 pounds | 1,2 | 1,2 | Keep dry. Glass bottles not permitted under deck |
| | Phosphorus, amorphous, red | Flammable solid | Flammable solid | None | 173.189 | Forbidden | 11 pounds | 1,2 | 1,2 | |
| | Phosphorus bromide. See Phosphorus tribromide | | | | | | | | | |
| | Phosphorus chloride. See Phosphorus trichloride | | | | | | | | | |
| | Phosphorus heptasulfide | Flammable solid | Flammable solid | None | 173.225 | Forbidden | 10 pounds | 1,2 | 1 | Separate from oxidizing materials |
| | Phosphorus oxybromide | Corrosive material | Corrosive | None | 173.271 | Forbidden | 1 quart | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| | Phosphorus oxychloride | Corrosive material | Corrosive | None | 173.271 | Forbidden | 1 quart | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| | Phosphorus pentachloride, solid | Corrosive material | Corrosive | None | 173.191 | Forbidden | 5 pounds | 1 | 1 | Keep dry |
| | Phosphorus pentasulfide | Flammable solid | Flammable solid, and Dangerous when wet | None | 173.225 | Forbidden | 11 pounds | 1,2 | 1,2 | Separate from oxidizing material |
| | Phosphorus sesquisulfide | Flammable solid | Flammable solid, and Dangerous when wet | None | 173.225 | Forbidden | 11 pounds | 1,2 | 1 | Separate from oxidizing materials |
| | Phosphorus tribromide | Corrosive material | Corrosive | None | 173.270 | Forbidden | 1 quart | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| | Phosphorus trichloride | Corrosive material | Corrosive | None | 173.271 | Forbidden | 1 quart | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| | Phosphorus trisulfide | Flammable solid | Flammable solid | None | 173.225 | Forbidden | 10 pounds | 1,2 | 1 | Separate from oxidizing materials |
| | Phosphorus, white or yellow, dry | Flammable solid | Flammable solid and Poison | None | 173.190 | Forbidden | Forbidden | 1,2 | 5 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| | Phosphorus, white or yellow, in water | Flammable solid | Flammable solid and Poison | None | 173.190 | Forbidden | 25 pounds | 1,2 | 5 | Separate from flammable gases or liquids, oxidizing materials or organic peroxides |
| | Phosphoryl chloride. See Phosphorus oxychloride | | | | | | | | | |
| | Photographic film. See Film | | | | | | | | | |
| | Photographic flash powder. See Fireworks, special or Low explosives | | | | | | | | | |
| | Picrate, dry. See High explosive | | | | | | | | | |
| | Picrate of ammonia. See High explosive | | | | | | | | | |
| | Picric acid, dry. See High explosive | | | | | | | | | |
| | Picric acid, wet, with not less than 10% water | Flammable solid | Flammable solid | None | 173.192 173.193 | 1 pound | 25 pounds | 1 | 5 | Under deck stowage permitted on cargo vessels if wet with more than 30% water. Stow away from heavy metals and their compounds |
| | Picric acid, wet with not less than 10% water, over 25 pounds. See High explosive | | | | | | | | | |
| | Pine oil | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |

§172.101 Hazardous Materials Table (cont'd)

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| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|--|-------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | Pinwheels. See Fireworks, common | | | | | | | | | |
| | Pivaloyl chloride. See Trimethyl acetylchloride | | | | | | | | | |
| | • Plastic solvent, n.o.s. | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | • Plastic solvent, n.o.s. | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | • Plutoniumnitrate solution | Radioactive material | Radioactive (See Sec. 172.403) | 173.393 | 173.396 | | | 1,2 | 1,2 | |
| | Poisonous liquid, n.o.s. or Poison B, liquid, n.o.s. | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,2 | 1 | |
| | Poisonous liquid or gas, n.o.s. | Poison A | Poison gas | None | 173.328 | Forbidden | Forbidden | 1 | 5 | |
| | Poisonous solid, n.o.s. or Poison B, solid, n.o.s. | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1 | |
| | • Polish, metal, stove, furniture or wood, liquid | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | • Polish, metal, stove, furniture or wood, liquid | Flammable liquid | Flammable liquid | 173.118 | 173.129 | 1 quart | 55 gallons | 1,2 | 1 | |
| | • Polymerizable material | | | 173.21 | | | | | | |
| | Potassium arsenate, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Potassium arsenite, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | • Potassium bifluoride solution. See • Potassium hydrogen fluoride solution | | | | | | | | | |
| | Potassium bromate | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 1,2 | Separate from ammonium compounds. Stow away from powdered metals |
| | Potassium chlorate (potash chlorate). | Oxidizer | Oxidizer | 173.153 | 173.163 | 25 pounds | 100 pounds | 1,2 | 1,2 | Separate from ammonium compounds. Stow away from powdered metals |
| | Potassium cyanide, solid | Poison B | Poison | 173.370 | | 25 pounds | 200 pounds | 1,2 | 1,2 | Stow away from acids |
| | • Potassium cyanide solution | Poison B | Poison | 173.345 | 173.352 | 1 quart | 55 gallons | 1,2 | 1,2 | Stow away from acids |
| | Potassium dichloro isocyanurate. See Potassium dichloro-s-triazinetrione | | | | | | | | | |
| | Potassium dichloro-s-triazinetrione, dry (containing more than 39% available chlorine) | Oxidizer | Oxidizer | 173.153 | 173.217 | 50 pounds | 100 pounds | 1,2 | 1,2 | |
| A | Potassium dichromate | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| A | Potassium fluoride | ORM-B | None | 173.505 | 173.510 | No limit | No limit | | | |
| | • Potassium fluoride solution | Corrosive material | Corrosive | 173.244 | 173.249 | 1 quart | 5 gallons | 1,2 | 1,2 | |
| | Potassium hydrate. See Caustic potash, dry, etc. | | | | | | | | | |
| | • Potassium hydrogen fluoride solution | Corrosive material | Corrosive | 173.244 | 173.249 | 1 quart | 5 gallons | 1,2 | 1,2 | |
| A | Potassium hydrogen sulfate, solid | ORM-B | None | 173.505 | 173.510 - 173.800 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Potassium hydroxide, dry solid, flake, bead, or granular | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1,2 | 1,2 | Keep dry. Do not stow with metals or alloys such as brass, copper, tin, zinc, aluminum, solder, or lead |
| | • Potassium hydroxide, liquid or solution | Corrosive material | Corrosive | 173.244 | 173.249 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | • Potassium hypochlorite solution. See Hypochlorite solutions containing more than 7% available chlorine by weight | | | | | | | | | |
| A | Potassium metabisulfite | ORM-B | None | 173.505 | 173.510 | No limit | No limit | | | |
| | Potassium, metal | Flammable solid | Flammable solid and Dangerous when wet | None | 173.206 | Forbidden | 25 pounds | 1,2 | 5 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | Potassium, metal liquid alloy | Flammable solid | Flammable solid and Dangerous when wet | None | 173.202 | Forbidden | 1 pound | 1,2 | 5 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | Potassium nitrate | Oxidizer | Oxidizer | 173.153 | 173.182 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Potassium nitrite | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 1,2 | Separate from ammonium compounds and cyanides. Stow away from food- stuffs |
| | Potassium nitrate mixed (fused) with sodium nitrite. | Oxidizer | Oxidizer | 173.153 | 173.183 | 25 pounds | 100 pounds | 1,2 | 1,2 | Separate from ammonium compounds and cyanides. Stow away from food- stuffs |
| | Potassium perchlorate | Oxidizer | Oxidizer | 173.153 | 173.219 | 25 pounds | 100 pounds | 1,3 | 1,3 | Stow away from powdered metals |
| | Potassium permanganate | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 1,2 | Separate from ammonium compounds and hydrogen peroxide |
| | Potassium peroxide | Oxidizer | Oxidizer | None | 173.154 | Forbidden | 100 pounds | 1,2 | 1,2 | Keep dry |

| (1) * W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|---------------------|--|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|--|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | Potassium sulfide <i>Pressurized product. See Compressed gas, n.o.s.</i> <i>Primer. See Cannon primer, combination primer, or small-arm primer</i> <i>Primer, detonating. See Detonating primer</i> <i>Projectile, explosive. See Explosive projectile</i> <i>Projectile, gas, nonexplosive. See Chemical ammunition, containing Poison or Irritating Material</i> <i>Projectile, gas, smoke, or incendiary, with burster or booster with or without detonating fuse. See Explosive projectile</i> <i>Projectile, illuminating, incendiary or smoke, with expelling charge but without bursting charge. See Fireworks, special</i> <i>Projectile, sand-loaded, empty or solid See 173.55</i> <i>Propane or Liquefied petroleum gas. See Liquefied petroleum gas</i> | Flammable solid | Flammable solid | 173.153 | 173.207 | 25 pounds | 300 pounds | 1,2 | 1,2 | Separate from liquid acids, flammable gases or liquids, oxidizing materials or organic peroxides |
| | Propellant explosive | Class A explosive | Explosive A | None | 173.64 | Forbidden | Forbidden | 6 | 5 | |
| | Propellant explosive (solid, Class B, and small-arm primer) See "Propellant explosive, solid" | Class B explosive | Explosive B | None | 173.93 | Forbidden | Forbidden | 1,3 | 5 | Magazine stowage authorized |
| | Propellant explosive in water (Smokeless powder) | Class B explosive | Explosive B | None | 173.93 | Forbidden | Forbidden | 1,3 | 5 | Magazine stowage authorized |
| | Propellant explosive in water, unstable, condemned, or deteriorated (smokeless powder) | Class B explosive | Explosive B | None | 173.93 | Forbidden | 10 pounds | 1,2 | 5 | Magazine stowage authorized |
| | Propellant explosive, liquid | Class B explosive | Explosive B | None | 173.93 | Forbidden | 10 pounds | 1,3 | 5 | Magazine stowage authorized |
| | Propellant explosive, solid | Class B explosive | Explosive B | None | 173.93 | Forbidden | 10 pounds | 1,3 | 5 | Magazine stowage authorized |
| | Propionaldehyde | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Propionic acid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 5 gallons | 1,2 | 1,2 | Separated by a complete compartment or hold from organic peroxides |
| | Propionic acid solution | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | Separated by a complete compartment or hold from organic peroxides |
| | Propionic anhydride | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 quart | 1,2 | 1 | Keep dry |
| | Propyl acetate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Propyl alcohol. See Alcohol, n.o.s. | | | | | | | | | |
| | Propylamine | Flammable liquid | Flammable liquid | None | 173.119 | Forbidden | 10 gallons | 1,3 | 5 | |
| | Propyl chloride | Flammable liquid | Flammable liquid | None | 173.119 | Forbidden | 10 gallons | 1,3 | 5 | |
| | Propylene diamine | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Propylene dichloride | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Propylene imine, inhibited | Flammable liquid | Flammable liquid | None | 173.139 | Forbidden | 5 pints | 1,2 | 1 | |
| | Propylene or Liquefied petroleum gas. See Liquefied petroleum gas | | | | | | | | | |
| | Propylene oxide | Flammable liquid | Flammable liquid | 173.118 | 173.119 | Forbidden | 1 gallon | 1,3 | 4 | |
| | Propyl formate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Propyl mercaptan | Flammable liquid | Flammable liquid | None | 173.141 | Forbidden | 10 gallons | 1,2 | 5 | |
| | Propyl trichlorosilane | Corrosive material | Corrosive | None | 173.280 | Forbidden | 10 gallons | 1 | 1 | Keep dry |
| | Prussic acid. See Hydrocyanic acid (prussic), liquid or unstabilized | | | | | | | | | |
| | Pyridine | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Pyrophoric liquid, or Pyroforic liquids, n.o.s. | Flammable liquid | Flammable liquid | None | 173.134 | Forbidden | Forbidden | 1 | 5 | Shade from radiant heat. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| | Pyro sulfuryl chloride | Corrosive material | Corrosive | 173.244 | 173.247 | 1 quart | 1 quart | 1 | 4 | Keep dry. Glass carboys not permitted on passenger vessels |
| | Pyroxylin plastic scrap | Flammable solid | Flammable solid | None | 173.195 | Forbidden | Forbidden | 1 | 5 | Shade from radiant heat |

§ 172.101 Hazardous Materials Table (cont'd)

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| (1) * W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|---------------------|---|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | | | | | | | | | | |
| | Pyroxylin plastics, rods, sheets, rolls, or tubes | Flammable solid | Flammable solid | 173.197 | | 50 pounds | 350 pounds | 1,3 | 1 | |
| | • Pyroxylin solution | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | • Pyroxylin solution | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | • Pyroxylin solvent, n.o.s. | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | • Pyroxylin solvent, n.o.s. | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Pyrrolidine | Flammable liquid | Flammable liquid | 173.118 | 173.119 | Forbidden | 10 gallons | 1,2 | 1 | |
| | Quicklime. See Calcium oxide | | | | | | | | | |
| | Radioactive device, n.o.s. | Radioactive material | None | 173.391 | | | | 1,2 | 1,2 | |
| | • Radioactive material, fissile, n.o.s. | Radioactive material | Radioactive | 173.393 | 173.396 | | | 1,2 | 1,2 | |
| | • Radioactive material, low specific activity or LSA, n.o.s. | Radioactive material | Radioactive | 173.392 | 173.393 | | | 1,2 | 1,2 | |
| | • Radioactive material, n.o.s. | Radioactive material | Radioactive | 173.393 | 173.395 | | | 1,2 | 1,2 | |
| | • Radioactive material, limited quantity, n.o.s. | Radioactive material | None | 173.391 | | | | 1,2 | 1,2 | |
| | • Radioactive material, special form, n.o.s. | Radioactive material | Radioactive | 173.393 | 173.394 | | | 1,2 | 1,2 | |
| | Rags, oily | Flammable solid | Flammable solid | None | 173.199 | Forbidden | Forbidden | 1,2 | 1,2 | Keep dry. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| | Rags, wet | Flammable solid | Flammable solid | None | 173.200 | Forbidden | Forbidden | 1 | 1 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| | Railway fusee. See Fusee | | | | | | | | | |
| | Railway torpedo. See Torpedo, railway | | | | | | | | | |
| | Range oil. See Fuel oil | | | | | | | | | |
| | • Reducing compound, paint, varnish, lacquer, etc. See *Compound, lacquer, paint, or varnish, etc., removing, reducing, or thinning, liquid | | | | | | | | | |
| | Refrigerant gas See Dispersant Gas | | | | | | | | | |
| | Refrigerating machine | Nonflammable gas | Nonflammable gas | 173.306 | | | | 1,3 | 1,3 | |
| | • Refrigerating machine | Flammable gas | Flammable gas | 173.306 | | | | 1,3 | 1,3 | |
| | • Refrigerating machine | Flammable liquid | Flammable liquid | 173.130 | 173.306 | | | 1,2 | 1 | |
| | • Removing compound, paint, varnish, lacquer, etc. See *Compound, lacquer, paint, or varnish, etc., removing, reducing, or thinning, liquid | | | | | | | | | |
| | • Resin solution (resin compound, liquid) | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Resin solution (resin compound, liquid) | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 55 gallons | 1,2 | 1 | |
| | Rifle grenade. See Grenade, hand or rifle, explosive | | | | | | | | | |
| | Rifle powder. See *Propellant explosive, or Black powder | | | | | | | | | |
| | Road asphalt or tar (when heated to or above its flash point). See Asphalt | | | | | | | | | |
| | Road asphalt or tar, liquid. See Asphalt, cut back | | | | | | | | | |
| | • Road oil | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Rocket ammunition with empty projectile | Class B explosive | Explosive B | None | 173.90 | Forbidden | Forbidden | 1,3 | 3 | |
| | Rocket ammunition with explosive projectile | Class A explosive | Explosive A | None | 173.57 | Forbidden | Forbidden | 6 | 5 | |
| | Rocket ammunition with gas projectile | Class A explosive | Explosive A | None | 173.57 | Forbidden | Forbidden | 6 | 5 | |
| | Rocket ammunition with illuminating projectile | Class A explosive | Explosive A | None | 173.57 | Forbidden | Forbidden | 6 | 5 | |
| | Rocket ammunition with incendiary projectile | Class A explosive | Explosive A | None | 173.57 | Forbidden | Forbidden | 6 | 5 | |
| | Rocket ammunition with inert loaded projectile | Class B explosive | Explosive B | None | 173.90 | Forbidden | Forbidden | 1,3 | 3 | |
| | Rocket ammunition with smoke projectile | Class A explosive | Explosive A | None | 173.57 | Forbidden | Forbidden | 6 | 5 | |
| | Rocket ammunition with solid projectile | Class B explosive | Explosive B | None | 173.90 | Forbidden | Forbidden | 1,3 | 3 | |

| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|--|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|--|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | Rocket body, with electric primer or electric squib, See 173.55 | Class B explosive | Explosive B | None | 173.95 | Forbid- den | Forbid- den | 1,2 | 5 | Magazine stowage authorized |
| | Rocket engine, liquid | | | | | | | | | |
| | Rocket fireworks, See Fireworks, common | | | | | | | | | |
| | Rocket head, See Explosive projectile | | | | | | | | | |
| | Rocket motor | Class A explosive | Explosive A | None | 173.79 | Forbid- den | Forbid- den | 6 | 5 | |
| | Rocket motor | Class B explosive | Explosive B | None | 173.92 | Forbid- den | Forbid- den | 550 pounds | 1,3 | 5 |
| | Roman candle, See Fireworks, common | | | | | | | | | |
| W | Resin (colophony) or Resin | ORM-C | None | 173.505 | 173.1060 | | | 1,2 | 1,2 | |
| | Rough ammoniate tankage (less than 7% moisture content) | Flammable solid | Flammable solid | None | 173.210 | Forbid- den | Forbid- den | 1 | 5 | |
| | Rough ammoniate tankage 7% or more moisture content | Flammable solid | Flammable solid | None | 173.210 | Forbid- den | Forbid- den | 1,2 | 1,2 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. Temperature of tankage must not exceed 100 deg F. |
| W | Rubber curing compound (solid) | ORM-C | None | 173.505 | 173.1065 | | | 1,2 | 1,2 | |
| | Rubber scrap or rubber buffings | Flammable solid | Flammable solid | 173.153 | 173.201 | 10 pounds | 10 pounds | 1,2 | 1,2 | |
| | Rubber shoddy, regenerated rubber, or reclaimed | Flammable solid | Flammable solid | 173.153 | 173.201 | 10 pounds | 10 pounds | 1,2 | 1,2 | |
| | Rubidium metal | Flammable solid | Flammable solid and Dangerous when wet | None | 173.206 | Forbid- den | 25 pounds | 1,2 | 5 | Segregation same as for flammable solid labeled Dangerous when wet |
| | Rubidium metal, in cartridges | Flammable solid | Flammable solid and Dangerous when wet | 173.206 | | 1 pound | 25 pounds | 1,2 | 4 | Segregation same as for flammable solid labeled Dangerous when wet |
| | Rum, denatured | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Rust preventive coating | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Safety fuse, See Fuse, safety | | | | | | | | | |
| | Safety squib | Class C explosive | Explosive C | None | 173.106 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Salute, See Fireworks common or special | | | | | | | | | |
| W | Sand acid, See Hydrofluorosilicic acid | ORM-C | None | 173.505 | 173.1070 | | | 1,2 | 1,2 | Keep dry |
| | Sawdust (when dry, clean, and free from oil) | | | | | | | | | |
| | Selenic acid, liquid | Corrosive material | Corrosive | None | 173.245 | Forbid- den | 5 pints | 1,2 | 1,2 | |
| | Self-lighting cigarette | Flammable solid | Flammable solid | 173.21 | | Forbid- den | Forbid- den | 1,2 | 1,2 | Keep dry |
| | Self propelled vehicle See Motor vehicle | | | | | | | | | |
| | Shaped charge, commercial, See High explosive 173.65(b) | | | | | | | | | |
| | Shellac, See *Paint, enamel, lacquer, stain, shellac, varnish, etc. | | | | | | | | | |
| | Shell, fireworks, See Fireworks, common or special | | | | | | | | | |
| | Ship, distress signal, See Fireworks, special | | | | | | | | | |
| | Signal flare | Class C explosive | Explosive C | None | 173.108 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Silicofluoric acid, See Hydrofluorosilicic acid | | | | | | | | | |
| | Silicon chloride or silicon tetrachloride | Corrosive material | Corrosive | 173.244 | 173.247 | 1 quart | 1 gallon | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| | Silicon chrome, exothermic, See Exothermic silicon chrome | | | | | | | | | |
| | Silicon tetrafluoride | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.302 | Forbid- den | 300 pounds | 1 | 4 | Stow away from foodstuffs |
| | Silver cyanide | Poison B | Poison | 173.370 | | 25 pounds | 200 pounds | 1,2 | 1,2 | Stow away from acids |
| | Silver nitrate | Oxidizer | Oxidizer | 173.153 | 173.182 | 25 pounds | 100 pounds | 1,2 | 1,2 | Stow away from foodstuffs |
| | Sisal, See Fibers | | | | | | | | | |
| | Sludge acid, See Acid, sludge | | | | | | | | | |
| | Small arms ammunition | Class C explosive | None | 173.101 | | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Small arms ammunition, irritating (tear gas) cartridge | Class C explosive | Irritant | None | 173.101 | Forbid- den | 150 pounds | 1,3 | 1,3 | |
| | Small arms primer | Class C explosive | Explosive C | None | 173.107 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Smoke candle | Class C explosive | Explosive C | None | 173.108 | 50 pounds | 200 pounds | 1,3 | 1,3 | |

§172.101 Hazardous Materials Table (cont'd)

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| (1) NFPA A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|------------------|--|------------------------|---|-------------------|--------------------------------------|---|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger- carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pass- enger vessel | (c) Other requirements |
| | Smoke generator. See Chemical ammunition, Poison A or B Material Smoke grenade | Class C explosive | Explosive C | None | 173.108 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Smokeless powder for cannon or small arms. See Propellant explosive, Class A or B | | | | | | | | | |
| | Smokeless powder for small arms (100 pounds or less) | Flammable solid | Flammable solid | 173.88 | 173.197a | Forbidden | Forbidden | 1,3 | 1,3 | Segregation same as for explosives |
| | Smoke pot | Class C explosive | Explosive C | None | 173.108 | 50 pounds | 200 pounds | 1,3 | 1,3 | |
| | Smoke projectile with bursting charge. See Explosive projectile | | | | | | | | | |
| | Smoke projectile with expelling charge but without bursting charge. See Fireworks, special | | | | | | | | | |
| | Smoke signal | Class C explosive | Explosive C | None | 173.108 | 50 pounds | 200 pounds | 1,3 | 1,3 | |
| | Soda amoniac. See High explosive | | | | | | | | | |
| | Soda lime, solid | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1,2 | 1,2 | Keep dry |
| A | Sodium aluminate, solid | ORM-B | None | 173.505 | 173.510 173.800 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Sodium aluminate solution | Corrosive material | Corrosive | 173.244 | 173.249 | 1 quart | 5 gallons | 1,2 | 1,2 | |
| | Sodium aluminum hydride | Flammable solid | Flammable solid and Dangerous when wet | None | 173.206 | Forbidden | 25 pounds | 1,2 | 5 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | Sodium amide | Flammable solid | Flammable solid and Dangerous When Wet | None | 173.206 | Forbidden | 25 pounds | 1,2 | 5 | Segregation same as for flammable solid labeled Dangerous When Wet |
| | Sodium arsenate | Poison B | Poison | 173.364 | 173.365 173.368 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Sodium arsenite (solution) liquid | Poison B | Poison | 173.345 | 173.346 | 1 quart | 55 gallons | 1,2 | 1,2 | |
| | Sodium azide | Poison B | Poison | 173.364 | 173.375 | 50 pounds | 100 pounds | 1,2 | 1,2 | Stow away from heavy metals, especially lead and its compounds. Stow separate from acids |
| | Sodium bisulfate, solid or solution. See appropriate Sodium hydrogen sulfate entry | | | | | | | | | |
| | Sodium bisulfite, solid. See Sodium hydrogen sulfite, solid | | | | | | | | | |
| | Sodium bromate | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 1,2 | Stow separate from ammonium compounds. Stow away from powdered metals |
| | Sodium chlorate (soda chlorate) | Oxidizer | Oxidizer | 173.153 | 173.163 | 25 pounds | 100 pounds | 1,2 | 1,2 | Stow separate from ammonium compounds. Stow away from powdered metals |
| | Sodium chlorite | Oxidizer | Oxidizer | None | 173.160 | Forbidden | 100 pounds | 1,2 | 1,2 | Stow separate from ammonium compounds. Stow away from powdered metals |
| | Sodium chlorite solution (not exceeding 42% sodium chlorite) | Corrosive material | Corrosive | 173.244 | 173.263 | 1 quart | 4 gallons | 1,2 | 1 | Glass carboys in hampers not permitted under deck |
| | Sodium cyanide, solid | Poison B | Poison | 173.370 | | 25 pounds | 200 pounds | 1,2 | 1,2 | Stow away from acids |
| | Sodium cyanide solution | Poison B | Poison | 173.345 | 173.352 | 1 quart | 55 gallons | 1,2 | 1,2 | Stow away from acids |
| | Sodium dichloro isocyanurate. See Sodium dichloro-s-triazine-trione | | | | | | | | | |
| | Sodium dichloro-s-triazine-trione | Oxidizer | Oxidizer | 173.153 | 173.217 | 50 pounds | 100 pounds | 1,2 | 1,2 | |
| A | Sodium dichromate | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| A | Sodium fluoride, solid | ORM-B | None | 173.505 | 173.510 | No limit | No limit | | | |
| | Sodium fluoride solution | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 5 gallons | 1,2 | 1,2 | Stow away from acids |
| | Sodium hydrate. See Caustic soda, dry, etc. | | | | | | | | | |
| | Sodium hydride | Flammable solid | Flammable solid and Dangerous when wet | None | 173.198 | Forbidden | 25 pounds | 1,2 | 5 | Segregation same as for flammable solids labeled Dangerous When Wet |
| A | Sodium hydrogen sulfate, solid | ORM-B | None | 173.505 | 173.510 173.800 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Sodium hydrogen sulfate solution | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 gallon | 1,2 | 1,2 | |
| A | Sodium hydrogen sulfite, solid | ORM-B | None | 173.505 | 173.510 | 25 pounds | 100 pounds | | | |
| | Sodium hydrosulfite (sodium dithionite) | Flammable solid | Flammable solid | 173.153 | 173.204 | 25 pounds | 100 pounds | 1,2 | 1,2 | Keep dry. Below deck stowage in metal drums only. Separate from flammable gases, liquids, oxidizing materials, or organic peroxides |

| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|--|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| A | Sodium hydroxide, dry solid, flake, bead, or granular | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds 1 quart | 200 pounds 5 gallons | 1,2 | 1,2 | Keep dry |
| | Sodium hydroxide, liquid or solution | Corrosive material | Corrosive | 173.244 | 173.249 | | | 1,2 | 1,2 | |
| A | Sodium metabisulfite | ORM-B | None | 173.505 | 173.510 | No limit | No limit | 1,2 | 5 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | Sodium, metal or metallic | Flammable solid | Flammable solid and Dangerous when wet | None | 173.206 | Forbidden | 25 pounds | 1,2 | 5 | |
| A | Sodium, metal dispersion in organic solvent | Flammable solid | Flammable solid and Dangerous when wet | None | 173.230 | Forbidden | 10 pounds | 1,2 | 5 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | Sodium, metal liquid alloy | Flammable solid | Flammable solid and Dangerous when wet | None | 173.202 | Forbidden | 1 pound | 1,2 | 5 | Segregation same as for flammable solids labeled Dangerous When Wet |
| A | Sodium methylate, alcohol mixture | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Sodium methylate, alcohol mixture | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| A | Sodium methylate, alcohol mixture | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 quart | 1,2 | 1,2 | |
| | Sodium methylate, dry | Flammable solid | Flammable solid | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 1 | Segregation same as for flammable solids labeled Dangerous When Wet |
| A | Sodium monoxide, solid | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1,2 | 1,2 | Keep dry |
| | Sodium nitrate | Oxidizer | Oxidizer | 173.153 | 173.182 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| A | Sodium nitrate bags. See Bags, sodium nitrate, empty and unwashed | Oxidizer | Oxidizer | 173.153 | 173.154 173.234 | 25 pounds | 100 pounds | 1,2 | 1,2 | Stow separate from ammonium compounds and cyanides. Bagged material not permitted on passenger vessels |
| | Sodium nitrite | | | | | | | | | |
| A | Sodium nitrite mixed (fused) with potassium nitrate | Oxidizer | Oxidizer | 173.153 | 173.183 | 25 pounds | 100 pounds | 1,2 | 1,2 | Stow separate from ammonium compounds and cyanides. |
| | Sodium nitrite mixture (sodium nitrate, sodium nitrite, and potassium nitrate) | Oxidizer | Oxidizer | 173.153 | 173.234 | 25 pounds | 100 pounds | 1,2 | 1,2 | Stow separate from ammonium compounds and cyanides. |
| A | Sodium pentachlorophenate | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| | Sodium perchlorate | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,3 | 1,3 | Stow away from powdered metals |
| A | Sodium permanganate | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 1,2 | Separate from ammonium compounds and hydrogen peroxide |
| | Sodium peroxide | Oxidizer | Oxidizer | None | 173.187 | Forbidden | 100 pounds | 1,2 | 1 | Keep dry. Stow away from powdered metals, permanganates, combustible packing of other cargo, and combustible foodstuffs |
| A | Sodium phenolate, solid | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Sodium phosphide | Flammable solid | Flammable solid and Dangerous when wet | None | 173.154 | Forbidden | 25 pounds | 1 | 5 | |
| A | Sodium picramate, wet (with at least 20% water) | Flammable solid | Flammable solid | None | 173.205 | Forbidden | 25 pounds | 1,2 | 5 | Stow away from heavy metals, especially lead, and its compounds |
| | Sodium potassium alloy | Flammable solid | Flammable solid and Dangerous when wet | None | 173.206 | Forbidden | 25 pounds | 1,2 | 5 | Under deck stowage must be readily accessible. Segregation same as for flammable solids labeled Dangerous When Wet |
| A | Sodium sulfate, acid. See appropriate Sodium hydrogen sulfate entry | Flammable solid | Flammable solid | 173.153 | 173.207 | 25 pounds | 300 pounds | 1,2 | 1,2 | Stow separate from liquid acids. Separate from flammable gases or liquids, oxidizing materials or organic peroxides |
| | Sodium sulfide, anhydrous | | | | | | | | | |
| A | Solvent, n.o.s. | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | Solvent, n.o.s. | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| A | Sparklers. See Fireworks, common | Flammable liquid | Flammable liquid | None | 173.133 | Forbidden | 6 quarts | 1,2 | 5 | Segregation same as for explosives |
| | Spent iron mass. See Iron mass, spent | | | | | | | | | |
| A | Spent iron sponge. See Iron sponge, spent | Flammable liquid | Flammable liquid | None | 173.133 | Forbidden | 6 quarts | 1,2 | 1 | |
| | Spent mixed acid. See Nitrating acid | | | | | | | | | |
| A | Spent oxide. See Oxide, spent | Flammable liquid | Flammable liquid | None | 173.133 | Forbidden | 6 quarts | 1,2 | 5 | |
| | Spent sulfuric acid. See Sulfuric acid, spent | | | | | | | | | |
| A | Spirits of nitroglycerin, (1 to 10%) | Flammable liquid | Flammable liquid | None | 173.133 | Forbidden | 6 quarts | 1,2 | 5 | Segregation same as for explosives |
| | Spirits of nitroglycerin, not exceeding 1% nitroglycerin by weight | Flammable liquid | Flammable liquid | 173.118 | 173.133 | 1 quart | 6 quarts | 1,2 | 1 | |
| A | Spirits of salt. See Hydrochloric acid | Flammable liquid | Flammable liquid | None | 173.133 | Forbidden | 6 quarts | 1,2 | 5 | |
| | | | | | | | | | | |

| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|--|------------------------|---|-------------------|--------------------------------------|---|----------------------------------|------------------------|---------------------------------|--|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railroad | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | <i>Sporting powder. See Black powder or Propellant explosive, solid, Class B explosive</i> <i>Spray starting fluid. See Engine starting fluid</i> <i>Spreader cartridge. See Fireworks, special</i> <i>Squib, electric or safety. See Electric squib or Safety squib</i> • <i>Stain. See *Paint, enamel, lacquer, stain, shellac, varnish, etc.</i> Stannic phosphide | Flammable solid | Flammable solid and Dangerous when wet | None | 173.154 | Forbidden | 25 pounds | 1 | 5 | Segregation same as for flammable solid labeled Dangerous When Wet |
| A | Stannous chloride, solid | ORM-B | None | 173.505 | 173.510 | No limit | No limit | | | |
| • | Starter cartridge | Class B explosive | Explosive B | None | 173.92 | Forbidden | 200 pounds | 1,3 | 5 | |
| • | Starter cartridge | Class C explosive | Explosive C | None | 173.102 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | <i>Storage battery wet. See Battery, electric storage, wet</i> <i>Straw. See Hay</i> Strontium arsenite, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Strontium chlorate | Oxidizer | Oxidizer | 173.153 | 173.163 | 25 pounds | 100 pounds | 1,2 | 1,2 | Stow separate from ammonium compounds. Stow away from powdered metals |
| • | Strontium chlorate, wet | Oxidizer | Oxidizer | 173.153 | 173.163 | 25 pounds | 200 pounds | 1,2 | 1,2 | Stow separate from ammonium compounds. Stow away from powdered metals |
| | Strontium nitrate | Oxidizer | Oxidizer | 173.153 | 173.182 | 25 pounds | 100 pounds | 1,2 | 1,2 | |
| | Strontium peroxide | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 1,2 | Keep dry |
| • | Strychnine salt, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Strychnine, solid | Poison B | Poison | None | 173.377 | Forbidden | 200 pounds | 1,2 | 1,2 | |
| | <i>Styphnate of lead. See Initiating explosive</i> Styrene monomer, inhibited | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Succinic acid peroxide | Organic peroxide | Organic peroxide | 173.153 | 173.157 | Forbidden | 25 pounds | 1 | 1 | |
| | Sulfur chloride (<i>mono and di</i>) | Corrosive material | Corrosive | None | 173.247 | Forbidden | 1 gallon | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| | Sulfur dioxide | Nonflammable gas | Nonflammable gas | 173.306 | 173.304 173.314 173.315 | Forbidden | 300 pounds | 1,2 | 4 | Stow away from living quarters |
| | Sulfur flower. <i>See Sulfur</i> Sulfur hexafluoride | Nonflammable gas | Nonflammable gas | 173.306 | 173.304 | 150 pounds | 300 pounds | 1,2 | 1,2 | |
| | Sulfuric acid (<i>For fuming sulfuric acid, see Oleum</i>) | Corrosive material | Corrosive | 173.244 | 173.272 | 1 quart | 1 gallon | 1 | 1 | Keep dry. Under deck stowage is permitted on cargo vessels only in metal drums |
| | Sulfuric acid, spent | Corrosive material | Corrosive | None | 173.248 | Forbidden | 1 quart | 1 | 1 | Under deck stowage is permitted on cargo vessels only in metal drums |
| | Sulfuric anhydride. <i>See Sulfur trioxide, stabilized</i> | | | | | | | | | |
| • | Sulfurous acid | Corrosive material | Corrosive | 173.244 | 173.245 | 2 gallons | 2 gallons | 1,2 | 1 | Glass carboys in hampers not permitted under deck |
| W | Sulfur, solid | ORM-C | None | 173.505 | 173.1080 | | | 1,2 | 1,2 | Protect from sparks and open flame. Stow separate from oxidizing materials. Segregation same as for flammable solids |
| | Sulfur trioxide, stabilized | Corrosive material | Corrosive | 173.244 | 173.273 | Forbidden | 1 gallon | 1,2 | 1,2 | Keep dry. Glass bottles not permitted under deck |
| | Sulfuryl chloride | Corrosive material | Corrosive | 173.244 | 173.247 | 1 quart | 1 quart | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| | Sulfuryl fluoride | Nonflammable gas | Nonflammable gas | 173.306 | 173.304 173.314 | 150 pounds | 300 pounds | 1,3 | 1 | |
| | Sulphur. <i>See Sulfur</i> Supplementary charge (explosive) | Class A explosive | Explosive A | None | 173.69 | Forbidden | Forbidden | 6 | 5 | |
| • | Tankage. <i>See Garbage tankage</i> | | | | | | | | | |
| • | Tankage fertilizer | Flammable solid | Flammable solid | None | 173.209 | Forbidden | Forbidden | 1 | 5 | Keep dry. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| • | Tankage, rough ammoniate | Flammable solid | Flammable solid | None | 173.210 | Forbidden | Forbidden | 1 | 5 | Keep dry. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |

| (1) W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------|--|------------------------|---|-------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | Tank car, containing residual phosphorus and filled with water or inert gas, See 173.190 | | | | | | | | | |
| | Tank car, empty (previously used for a hazardous material), See 173.29 | | | | | | | | | |
| | Tank car, empty (previously used for a Poison A material), See 172.510 and 173.29 | | | | | | | | | |
| | Tank, portable, empty (previously used for a hazardous material), See 172.510, 173.29, and 172.514 | | | | | | | | | |
| | Tank truck, empty, See 172.510, 172.514 and 173.29. | | | | | | | | | |
| | • Tar, liquid | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| | • Tar, liquid | Flammable liquid | Flammable liquid | 173.118 | 173.131 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Tear gas ammunition. See Chemical ammunition (containing an irritant material) | | | | | | | | | |
| | Tear gas candle | Irritating material | Irritant | None | 173.385 | Forbidden | 75 pounds | 1 | 5 | Stow away from living quarters |
| | Tear gas cartridge. See Small arms ammunition irritating (tear gas) cartridge | | | | | | | | | |
| | Tear gas grenade. See Grenade, tear gas | | | | | | | | | |
| | Tertiary alcohol. See Alcohol, n.o.s. | | | | | | | | | |
| | Tertiary butyl isopropyl benzene hydroperoxide | Organic peroxide | Organic peroxide | 173.153 | 173.224 | 1 quart | 1 quart | 1,2 | 4 | |
| AW | Tetrachloroethane | ORM-A | None | 173.505 | 173.620 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| A | or Perchloroethylene | ORM-A | None | 173.505 | 173.510 173.605 | 10 gallons | 55 gallons | | | |
| | Tetrachloroethylene | Poison A | Poison gas | None | 173.334 | Forbidden | Forbidden | 1 | 5 | Shade from radiant heat. Stow away from living quarters. Segregation same as for nonflammable gases |
| | Tetraethyl dithio pyrophosphate and compressed gas mixture | Poison B | Poison | None | 173.358 | Forbidden | 1 quart | 1 | 5 | |
| | Tetraethyl dithio pyrophosphate, liquid | Poison B | Poison | None | 173.377 | Forbidden | 200 pounds | 1 | 5 | |
| | Tetraethyl dithio pyrophosphate mixture, dry | Poison B | Poison | None | 173.359 | Forbidden | 1 quart | 1 | 5 | |
| | Tetraethyl dithio pyrophosphate mixture, liquid | Poison B | Poison | None | 173.354 | Forbidden | 55 gallons | 1 | 5 | If flash point is 141 deg F. or less, segregation must be the same as for flammable liquids |
| | Tetraethyl lead, liquid (including flash point for export shipment by water) | Poison A | Poison gas | None | 173.334 | Forbidden | Forbidden | 1 | 5 | Shade from radiant heat. Stow away from living quarters. Segregation same as for nonflammable gases |
| | Tetraethyl pyrophosphate and compressed gas mixture | Poison B | Poison | None | 173.358 | Forbidden | 1 quart | 1,2 | 5 | |
| | Tetraethyl pyrophosphate, liquid | Poison B | Poison | None | 173.377 | Forbidden | 200 pounds | 1,2 | 5 | |
| | Tetraethyl pyrophosphate mixture, dry | Poison B | Poison | None | 173.359 | Forbidden | 1 quart | 1,2 | 5 | |
| | Tetraethyl pyrophosphate mixture, liquid | Flammable gas | Flammable gas | 173.306 | 173.304 | Forbidden | 300 pounds | 1,2 | 1,2 | Stow away from living quarters |
| | Tetrafluoroethylene, inhibited | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | 1,2,3,6-Tetrahydrobenzaldehyde | Flammable liquid | Flammable liquid | None | 173.119 | Forbidden | 10 gallons | 1,3 | 5 | |
| | Tetrahydrofuran | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Tetramethyl ammonium hydroxide, liquid | ORM-A | None | 173.505 | 173.510 | | | | | |
| A | Tetramethyl methylene diamine | Oxidizer | Oxidizer | None | 173.203 | Forbidden | Forbidden | 1 | 5 | Shade from radiant heat. Stow away from foodstuffs |
| | Tetranitromethane | | | | | | | | | |
| | Tetrazene (guanyl nitrosamino guanyltetrazene). See Initiating explosive | | | | | | | | | |
| | Tetryl. See High explosive | | | | | | | | | |
| | • Textile treating compound mixture, liquid | Corrosive material | Corrosive | 173.244 | 173.245 173.249a | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Textile waste. See Cotton waste | | | | | | | | | |
| | Textile waste, wet | Flammable solid | Flammable solid | None | 173.211 | Forbidden | Forbidden | 1,2 | 1,2 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| | • Thallium salt, solid, n.o.s. | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Thallium sulfate, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | |
| | Thinner for rust preventive coating. See Rust preventive coating | | | | | | | | | |

| (1) * W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|---------------------|--|------------------------|---|-------------------|--------------------------------------|---|----------------------------------|------------------------|---------------------------------|--|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railroad | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | <i>Thinning compound, paint, varnish, lacquer, etc. See *Paint, enamel, lacquer, stain, shellac, varnish, etc.</i> | | | | | | | | | |
| | <i>Thiocarbonyl chloride. See Thiophosgene</i> | | | | | | | | | |
| | Thioglycolic acid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 gallon | 1.2 | 1.2 | Glass carboys in hampers not permitted under deck |
| | Thionyl chloride | Corrosive material | Corrosive | None | 173.247 | Forbidden | 1 gallon | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| | Thiophosgene | Poison B | Poison | None | 173.356 | Forbidden | 1 gallon | 1 | 5 | Shade from radiant heat |
| | Thiophosphoryl chloride | Corrosive material | Corrosive | None | 173.271 | Forbidden | 1 quart | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| A | Thiram | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| | Thorium metal, pyrophoric | Radioactive material | Radioactive and Flammable solid | 173.226 | 173.226 | | | 1.2 | 1.2 | |
| | Thorium nitrate | Radioactive material | Radioactive and Oxidizer | 173.392 | 173.393 | | | 1.2 | 1.2 | Separate longitudinally by a complete hold or compartment from explosives |
| | <i>Time fuse. See Fuse, time, non-detonating</i> | | | | | | | | | |
| | <i>Tin chloride, fuming. See Tin tetrachloride, anhydrous</i> | | | | | | | | | |
| | <i>Tinning flux. See *Zinc chloride solution</i> | | | | | | | | | |
| | <i>Tin perchloride. See Tin tetrachloride, anhydrous</i> | | | | | | | | | |
| | Tin tetrachloride, anhydrous | Corrosive material | Corrosive | 173.244 | 173.247 | 1 quart | 1 quart | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| | Titanium metal powder, dry or wet with less than 20% water | Flammable solid | Flammable solid | None | 173.208 | Forbidden | 75 pounds | 1.2 | 5 | |
| | Titanium metal powder, wet with 20% or more water | Flammable solid | Flammable solid | None | 173.208 | Forbidden | 150 pounds | 1.2 | 5 | |
| | Titanium sulfate solution containing not more than 45% sulfuric acid | Corrosive material | Corrosive | 173.244 | 173.297 | 1 quart | 1 gallon | 1 | 4 | Shade from radiant heat. Keep dry |
| | Titanium tetrachloride | Corrosive material | Corrosive | 173.244 | 173.247 | 1 quart | 10 gallons | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| | Toluene (toluol) | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1.2 | 1 | |
| A | Toluenediamine | ORM-A | None | 173.505 | 173.510 | No limit | No limit | | | |
| | Toluene dithiocyanate | Poison B | Poison | 173.345 | 173.346 | Forbidden | 55 gallons | 1.3 | 1.3 | Shade from radiant heat |
| | Toluene sulfonic acid, liquid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1.2 | 1.2 | |
| | <i>Torch. See Fireworks, common</i> | | | | | | | | | |
| | Torpedo, railway | Class B explosive | Explosive B | None | 173.91 | Forbidden | 200 pounds | 1.2 | 1.2 | Passenger vessels in metal lockers only |
| | Toy caps | Class C explosive | Explosive C | None | 173.100 173.109 | 50 pounds | 150 pounds | 1.3 | 1.3 | |
| | Toy propellant device | Class C explosive | Explosive C | None | 173.111 | 50 pounds | 150 pounds | 1.3 | 1.3 | |
| | Toy smoke device | Class C explosive | Explosive C | None | 173.111 | 50 pounds | 150 pounds | 1.3 | 1.3 | |
| | <i>Toy torpedo. See Fireworks, special</i> | | | | | | | | | |
| | Tracer | Class C explosive | Explosive C | None | 173.105 | 50 pounds | 150 pounds | 1.3 | 1.3 | |
| | Tracer fuze | Class C explosive | Explosive C | None | 173.105 | 50 pounds | 150 pounds | 1.3 | 1.3 | |
| | Tractor. See Motor vehicle | | | | | | | | | |
| | Trailer or truck body with refrigeration or heating equipment. See Motor vehicle | | | | | | | | | |
| | <i>Treated paper (manufactured article properly dried to prevent spontaneous heating). See Oiled material</i> | | | | | | | | | |
| | <i>Treated textile (manufactured article properly dried to prevent spontaneous heating). See Oiled material</i> | | | | | | | | | |
| | Trichloroacetic acid, solid | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1.2 | 1 | |
| | Trichloroacetic acid solution | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 quart | 1.2 | 1.2 | Glass carboys in hampers not permitted under deck |
| A | Trichloroethylene | ORM-A | None | 173.505 | 173.510 173.605 | 10 gallons | 55 gallons | | | |
| | Trichlorosilane | Flammable liquid | Flammable liquid | None | 173.136 | Forbidden | 10 gallons | 1 | 5 | Segregation same as for flammable solids labeled Dangerous-When Wet |
| | Trichloro-s-triazinetrione, dry (containing over 39% available chlorine) | Oxidizer | Oxidizer | 173.153 | 173.217 | 50 pounds | 100 pounds | 1.3 | 1.3 | Keep dry (mono-(Trichloro) tetra-(monopotassium dichloro)-penta-s-triazinetrione, dry (containing over 39% available chlorine) |
| | Trick matches | Class C explosive | Explosive C | None | 173.111 | Forbidden | Forbidden | 1.3 | 1.3 | |

§172.101 Hazardous Materials Table (cont'd)

| (1) * W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|-------------------------|---|----------------------------|---|-----------------------|--|--|--------------------------------------|----------------------------|-------------------------------------|---|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | Trick noise maker, explosive | Class C explosive | Explosive C | None | 173.111 | 50 pounds | 150 pounds | 1,3 | 1,3 | |
| | Triethylamine | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| | Trifluoroethylene | Flammable gas | Flammable gas | 173.306 | 173.304 173.314 | Forbid- den | 10 gallons | 1,2 | 1 | |
| | Trimethyl acetyl chloride | Corrosive material | Corrosive | 173.244 | 173.247 | 1 quart | 1 quart | 1,2 | 1,2 | |
| | Trimethylamine, anhydrous | Flammable gas | Flammable gas | 173.306 | 173.304 173.314 173.315 | Forbid- den | 100 pounds | 1 | 4 | |
| • | Trimethylamine, aqueous solution | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | Stow away from mercury and mercury compounds |
| | Trimethylchlorosilane | Flammable liquid | Flammable liquid | None | 173.135 | Forbid- den | 10 gallons | 1,2 | 1 | |
| • | Trinitrobenzene, dry. See High explosive | | | | | | | | | |
| • | Trinitrobenzene, wet containing at least 10% water | Flammable solid | Flammable solid | 173.212 | | 1 pound | 1 pound | 1 | 4 | Stow away from heavy metals and their compounds |
| • | Trinitrobenzoic acid, dry. See High explosive | | | | | | | | | |
| • | Trinitrobenzoic acid, wet, containing at least 10% water | Flammable solid | Flammable solid | None | 173.192 173.193 | 1 pound | 25 pounds | 1 | 5 | Stow away from heavy metals and their compounds |
| | Trinitrobenzoic acid, wet, containing at least 10% water, over 25 pounds in one outside packaging. See High explosive | | | | | | | | | |
| | Trinitroresorcinol. See High explosive | | | | | | | | | |
| | Trinitrotoluene, dry. See High explosive | | | | | | | | | |
| | Trinitrotoluene, wet containing at least 10% water | Flammable solid | Flammable solid | 173.212 | | 1 pound | 1 pound | 1 | 4 | Stow away from heavy metals and their compounds |
| | Tri-(1-aziridinyl) phosphine oxide | Corrosive material | Corrosive | 173.244 | 173.299a | 1 quart | 1 gallon | 1 | 1 | Keep dry. Glass carboys not permitted on passenger vessels |
| • | Turpentine | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| • | Turpentine | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| • | Turpentine substitute | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | |
| • | Turpentine substitute | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | |
| W | Twisted jute packing (rope) (treated or untreated). See Oakum | | | | | | | | | |
| | Uranium hexafluoride, fissile (containing more than 0.7% U-235) | Radioactive material | Radioactive and corrosive | 173.393 | 173.396 | | | 1,2 | 1,2 | |
| | Uranium hexafluoride, low specific activity (containing 0.7% or less U-235) | Radioactive material | Radioactive and corrosive | 173.392 | 173.393 | | | 1,2 | 1,2 | |
| | Uranium metal, pyrophoric | Radioactive material | Radioactive and flammable solid | 173.392 | 173.393 173.396 | | | 1,2 | 1,2 | |
| | Uranyl nitrate hexahydrate solution | Radioactive material | Radioactive and corrosive | 173.392 | 173.393 173.395 173.396 | | | 1,2 | 1,2 | |
| | Uranyl nitrate, solid | Radioactive material | Radioactive and oxidizer | 173.392 | 173.393 173.396 | | | 1,2 | 1,2 | Separate longitudinally by an interven- ing hold or compartment from explo- sives |
| • | Urea nitrate, dry. See High explosive | | | | | | | | | |
| • | Urea nitrate, wet with 10% or more water | Flammable solid | Flammable solid | None | 173.192 173.193 | 1 pound | 25 pounds | 1,2 | 1,2 | |
| | Urea nitrate, wet with 10% or more water, over 25 pounds in one outside packaging. See High explosive | | | | | | | | | |
| | Urea peroxide | Organic peroxide | Organic peroxide | 173.153 | 173.227 | 2 pounds | 25 pounds | 1 | 4 | Keep dry. Shade from radiant heat |
| | Valeric acid | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 10 gallons | 1,2 | 1,2 | |
| | Valeryl chloride | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 gallon | 1,2 | 1,2 | |
| | Vanadium oxytrichloride | Corrosive material | Corrosive | 173.244 | 173.247a | Forbid- den | 1 quart | 1 | 4 | Shade from radiant heat |
| | Vanadium tetrachloride | Corrosive material | Corrosive | 173.244 | 173.247a | Forbid- den | 1 quart | 1 | 4 | Shade from radiant heat |
| | Varnish. See *Paint, enamel, lacquer, stain, shellac, varnish, etc. | | | | | | | | | |
| | Varnish drier. See *Paint drier, liquid | | | | | | | | | |
| | Varnish remover or reducer. See *Compound, lacquer, paint or varnish removing, reducing, or thinning liquid | | | | | | | | | |
| | Varnish thinning compound. See *Compound, lacquer, paint, or varnish removing, reducing, or thinning liquid | | | | | | | | | |

§172.101 Hazardous Materials Table (cont'd)

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| (1) * W/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | | |
|---------------------|---|------------------------|---|-------------------|---------------------------------|--|----------------------------------|------------------------|---------------------------------|---|--|
| | | | | (a) Exceptions | (b) Specific requirements | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements | |
| | | | | | | | | | | | |
| | Very signal cartridge | Class C explosive | Explosive C | None | 173.108 | 50 pounds | 200 pounds | 1,3 | 1,3 | | |
| | Vinyl acetate | Flammable liquid | Flammable liquid | 173.118 | 173.119 | Forbidden | 1 quart | 1,2 | 1 | | |
| | Vinyl chloride | Flammable gas | Flammable gas | 173.306 | 173.304 173.314 173.315 | Forbidden | 300 pounds | 1,2 | 4 | Stow away from living quarters | |
| | Vinyl ethyl ether, inhibited | Flammable liquid | Flammable liquid | None | 173.119 | Forbidden | 1 gallon | 1,3 | 5 | | |
| | Vinyl fluoride, inhibited | Flammable gas | Flammable gas | 173.306 | 173.304 173.314 173.315 | Forbidden | 300 pounds | 1 | 4 | | |
| | Vinylidene chloride, inhibited | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,3 | 4 | | |
| | Vinyl isobutyl ether | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | | |
| | Vinyl methyl ether, inhibited | Flammable gas | Flammable gas | 173.306 | 173.304 173.314 | Forbidden | 30 pounds | 1,2 | 1 | Stow away from living quarters | |
| | Vinyl trichlorosilane | Flammable liquid | Flammable liquid | None | 173.135 | Forbidden | 10 gallons | 1,2 | 1 | | |
| | Vitriol, oil of. See Sulfuric acid | | | | | | | | | | |
| | War head. See Explosive projectile | | | | | | | | | | |
| | Waste paper, wet | Flammable solid | Flammable solid | None | 173.186 | Forbidden | Forbidden | 1,2 | 1,2 | Separate from flammable gas or liquids, oxidizing materials, or organic perox- ides | |
| | Waste textile, wet | Flammable solid | Flammable solid | None | 173.211 | Forbidden | Forbidden | 1,2 | 1,2 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides | |
| | Waste wool, wet | Flammable solid | Flammable solid | None | 173.213 | Forbidden | Forbidden | 1,2 | 1,2 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides | |
| | Water reactive solid, n.o.s. | Flammable solid | Flammable solid and Dangerous when wet | 173.153 | 173.154 | Forbidden | 25 pounds | 1,2 | 4 | Segregation same as for flammable solids labeled Dangerous When Wet | |
| | Water treatment compounds, liquid | Corrosive material | Corrosive | 173.244 | 173.249 | 1 quart | 10 gallons | 1 | 1 | | |
| | Wax, liquid | Combustible liquid | None | 173.118a | None | No limit | No limit | 1,2 | 1,2 | | |
| | Wet hair. See Hair, wet | | | | | | | | | | |
| | Wet textile waste. See Waste textile, wet | | | | | | | | | | |
| | White acid (ammonium bifluoride and hydrochloric acid mixture) | Corrosive material | Corrosive | 173.244 | 173.264 | 1 quart | 1 gallon | 1 | 1 | | |
| | Wood filler. See *Paint, varnish, lacquer, stain, shellac enamel, etc. | | | | | | | | | | |
| | Wood shavings (when dry, clean and free from oil). See Sawdust | | | | | | | | | | |
| | Wool waste. See Cotton waste | | | | | | | | | | |
| | Wool waste, wet. See Waste wool, wet | | | | | | | | | | |
| | Xenon | Nonflamma- ble gas | Nonflamma- ble gas | 173.306 | 173.302 | 150 pounds | 300 pounds | 1,2 | 1,2 | | |
| | X-ray film. See Film | | | | | | | | | | |
| | Xylene (xylol) | Flammable liquid | Flammable liquid | 173.118 | 173.119 | 1 quart | 10 gallons | 1,2 | 1 | | |
| | Xylyl bromide | Irritating material | Irritant | None | 173.382 | Forbidden | 75 pounds | 1 | 5 | Stow away from living quarters | |
| | Yeast, active, in liquid or pressed form | ORM-C | None | None | 173.1085 | | | | | | |
| | Zinc ammonium nitrite | Oxidizer | Oxidizer | None | 173.228 | 25 pounds | 100 pounds | 1,3 | 5 | This material may be forbidden in water transportation by certain countries | |
| | Zinc arsenate | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | | |
| | Zinc arsenite, solid | Poison B | Poison | 173.364 | 173.365 | 50 pounds | 200 pounds | 1,2 | 1,2 | | |
| | Zinc chlorate | Oxidizer | Oxidizer | 173.153 | 173.163 | 25 pounds | 100 pounds | 1,2 | 1,2 | Stow separate from ammonium com- pounds and away from powdered metals | |
| | Zinc chloride solution | Corrosive material | Corrosive | 173.244 | 173.245 | 1 quart | 1 quart | 1,2 | 1,2 | | |
| | Zinc cyanide | Poison B | Poison | 173.370 | | 25 pounds | 200 pounds | 1,2 | 1,2 | Stow away from acids | |
| | Zinc ethyl. See Pyrophoric liquids, n.o.s. | | | | | | | | | | |
| | Zinc muriate solution. See Zinc chloride solution | | | | | | | | | | |
| | Zinc nitrate. See Nitrates, n.o.s. | | | | | | | | | | |
| | Zinc permanganite | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 1,2 | Separate from ammonium compounds and hydrogen peroxide | |
| | Zinc peroxide | Oxidizer | Oxidizer | 173.153 | 173.154 | 25 pounds | 100 pounds | 1,2 | 1,2 | Keep dry | |

| (1) or w/ A | (2) Hazardous materials descriptions and proper shipping names | (3) Hazard class | (4) Label(s) required (if not excepted) | (5) * Packaging | | (6) Maximum net quantity in one package | | (7) Water shipments | | |
|----------------------|---|------------------------|---|--------------------|--------------------------------------|--|----------------------------------|------------------------|---------------------------------|---|
| | | | | (a) Exceptions | (b) Specific require- ments | (a) Passenger carrying aircraft or railcar | (b) Cargo only aircraft | (a) Cargo vessel | (b) Pas- senger vessel | (c) Other requirements |
| | | | | | | | | | | |
| | Zirconium hydride | Flammable solid | Flammable solid and Dangerous when wet | None | 173.206 | Forbid- den | 150 pounds | 1,2 | 5 | Segregation same as for flammable solids labeled Dangerous When Wet |
| | Zirconium metal, dry, <i>chemically produced, finer than 20 mesh particle size</i> | Flammable solid | Flammable solid | None | 173.214 | Forbid- den | 75 pounds | 1 | 5 | Separate from flammable gases or liquids, oxidizing materials or organic peroxides |
| | Zirconium metal, dry, <i>mechanically produced, finer than 270 mesh particle size</i> | Flammable solid | Flammable solid | None | 173.214 | Forbid- den | 75 pounds | 1 | 5 | Separate from flammable gases or liquids, oxidizing materials or organic peroxides |
| | Zirconium, metal, liquid, suspensions | Flammable liquid | Flammable liquid | None | 173.140 | Forbid- den | 5 gallons | 1 | 5 | |
| | Zirconium metal, wet, <i>chemically produced, finer than 20 mesh particle size</i> | Flammable solid | Flammable solid | None | 173.214 | Forbid- den | 150 pounds | 1,2 | 5 | |
| | Zirconium metal, wet <i>mechanically produced, finer than 270 mesh particle size</i> | Flammable solid | Flammable solid | None | 173.214 | Forbid- den | 150 pounds | 1,2 | 5 | |
| | Zirconium picramate, wet with at least 20% of water | Flammable solid | Flammable solid | None | 173.216 | Forbid- den | 25 pounds | 1 | 1 | Stow away from heavy metals and their salts |
| | Zirconium scrap (<i>borings, clippings, shavings, sheets, or turnings</i>) | Flammable solid | Flammable solid | 173.153 | 173.220 | Forbid- den | Forbid- den | 1 | 4 | Separate from flammable gases or liquids, oxidizing materials, or organic peroxides |
| | Zirconium tetrachloride, solid | Corrosive material | Corrosive | 173.244 | 173.245b | 25 pounds | 100 pounds | 1,2 | 1,2 | |

Subpart C is revised to read as follows:

- Subpart C—Shipping Papers**
- Sec.
- 172.200 Applicability.
- 172.201 General entries.
- 172.202 Description of hazardous materials on shipping papers.
- 172.203 Additional description requirements.
- 172.204 Shipper's certification.

Subpart C—Shipping Papers

§ 172.200 Applicability.

(a) *Description of hazardous materials required.* Except as otherwise provided in this subpart, each person who offers a hazardous material for transportation shall describe the hazardous material on the shipping paper in the manner required by this subpart.

(b) *Exceptions.* This subpart does not apply to any material that is—

(1) An ORM-A, B, or C, unless it is offered or intended for transportation by air when it is subject to the regulations pertaining to transportation by air as specified in § 172.101; or

(2) An ORM-A, B, or C, unless it is offered or intended for transportation by water when it is subject to the regulations pertaining to transportation by water as specified in § 172.101; or

(3) An ORM-D unless it is offered or intended for transportation by air.

§ 172.201 General entries.

(a) *Contents.* When a description of hazardous material is required to be included on a shipping paper, that description must conform to the following requirements:

(1) When a hazardous material and a nonhazardous material are described on the same shipping paper, the hazardous material description entries required by § 172.202 and those additional entries that may be required by § 172.203.

(i) Must be entered first, or

(ii) Must be entered in a color that clearly contrasts with any description of a nonhazardous material on the shipping paper, or a description on a reproduction of a shipping paper may be highlighted, rather than printed, in a contrasting color, or

(iii) Must be identified by the entry of an "X" placed before the proper shipping name in a column captioned "HM".

(2) The required shipping description on a shipping paper and all copies thereof used for transportation purposes, must be legible and printed (manually or mechanically) in English.

(3) Unless it is specifically authorized or required in this subpart, the required shipping description may not contain any code or abbreviation.

(4) A shipping paper may contain additional information concerning the material provided the information is not inconsistent with the required description. Unless otherwise permitted or required by this subpart, additional information must be placed after the basic description required by §§ 172.202(a) (1) and (a) (2).

(i) When appropriate, the entry "IMCO" may be entered immediately

following the class in the basic description.

(ii) For a material meeting the definition of more than one hazard class, the additional hazard class or classes entered may be entered after the hazard class in the basic description.

(b) *Name of shipper.* A shipping paper for a shipment by water must contain the name of the shipper.

§ 172.202 Description of hazardous material on shipping papers.

(a) Each description of a hazardous material on the shipping paper must include—

(1) The proper shipping name prescribed for the material as required by § 172.101.

(2) The class prescribed for the material as required by § 172.101. When the words of the proper shipping name are identical (excluding the entry "n.o.s.") with the words of the class, the inclusion of the class is not required.

(3) [Reserved]

(4) Except for empty packagings, the total quantity (by weight, volume, or as otherwise appropriate) of the hazardous material covered by the description.

(b) The basic description specified in paragraphs (a) (1) and (a) (2) of this section must be shown in sequence except that the technical name of the material may be entered between the proper shipping name and the class. For example: "Gasoline, Flammable liquid"; or "Flammable solid, n.o.s."; or "Corrosive liquid, n.o.s. (caprylyl chloride), corrosive material."

(c) The total quantity of the material covered by one description must appear before or after, or both before and after, the description required and authorized by this subpart.

(1) Abbreviations may be used to specify the type of packaging and weight or volume. For example: 40 cyl. Nitrogen, Non-flammable Gas-800 pounds; 1 box Cement, liquid n.o.s., Flammable liquid, 25 lbs.

(2) The type of packaging may be entered in any appropriate manner.

§ 172.203 Additional description requirements.

(a) *Exemptions.* Each shipping paper issued in connection with a shipment made under an exemption must bear the notation "DOT-E" followed by the exemption number assigned and so located that the notation is clearly associated with the description to which the exemption applies.

(b) *Limited quantities.* The description for a material defined as "limited quantities" in this subchapter must include the words "Limited Quantities" or "Ltd. Qty." following the basic description.

(c) *Blasting caps.* The description for a shipment of blasting caps must have an entry stating the number of caps in the shipment, either before or after the basic description.

(d) *Radioactive material.* (1) The description for a shipment of radioactive

material must include the following additional entries as appropriate:

(i) The name of each radionuclide in the radioactive material that is listed in § 173.390 of this subchapter. Abbreviations, e.g., "Mo" are authorized.

(ii) A description of the physical and chemical form of the material, if the material is not in special form.

(iii) The activity contained in each package of the shipment in terms of curies, millicuries, or microcuries. Abbreviations are authorized.

(iv) The category of label applied to each package in the shipment. For example: "RADIOACTIVE WHITE-I."

(v) The transport index assigned to each package in the shipment bearing RADIOACTIVE YELLOW-II or RADIOACTIVE YELLOW-III labels.

(vi) For a shipment of fissile radioactive materials—

(A) The words "Fissile Exempt," if the package is exempt pursuant to § 173.396 (a) of this subchapter, or

(B) If not exempt, the fissile class of each package in the shipment, pursuant to § 173.389(a) of this subchapter; and

(C) For a Fissile Class III shipment, the additional notation: "Warning—Fissile Class III Shipment. Do not Load More Than * * * Packages per Vehicle." (Asterisks to be replaced by appropriate number.) "In loading and Storage Areas, Keep at Least 20 Feet (6 Meters) from Other Packages Bearing Radioactive Labels."

(D) If a Fissile Class III shipment is to be transported by water, the supplementary notation must also include the following statement: "For shipment by water, only one Fissile Class III shipment is permitted in each hold."

(vii) For a package approved by the U.S. Energy Research and Development Administration (ERDA) or U.S. Nuclear Regulatory Commission (USNRC), a notation of the package identification marking as prescribed in the applicable ERDA or USNRC approval. (See § 173.393a of the subchapter.)

(viii) For an export shipment or a shipment in a foreign made package, a notation of the package identification marking as prescribed in the applicable International Atomic Energy Agency (IAEA) Certificate of Competent Authority which has been issued for the package. (See § 173.393b(a) (3) of the subchapter.)

(e) *Empty packagings.* For other than a tank car, the description on the shipping paper for an empty packaging containing the residue of a hazardous material may contain the word "EMPTY" or "EMPTY: Last Contained -----" This entry may be before or after the basic description.

(f) *Transportation by air.* When a package containing a hazardous material is offered for transportation by air and this subchapter prohibits its transportation aboard passenger-carrying aircraft, the words "Cargo-only aircraft" must be entered after the basic description.

(g) *Transportation by rail.* (1) The shipping paper for a rail car (including

an empty tank car) containing a hazardous material must contain the notation "Placarded" followed by the name of the placard required for the rail car.

(2) For certain empty rail cars, the description required by § 174.25 of this subchapter must be entered either before the name of the class of the material or following the basic description of the material in the car.

(3) The shipping paper for each specification DOT 112A or 114A tank car (without head shields) containing a flammable compressed gas must contain the notation, "DOT 112A" or "DOT 114A," as appropriate, and either "Must be handled in accordance with FRA E.O. No. 5" or "Shove to rest per E.O. No. 5."

(h) *Transportation by highway.* Following the basic description for a hazardous material in a specification MC 330 or MC 331 cargo tank made of quenched and tempered steel, there must be entered for—

(1) *Anhydrous ammonia.* (i) The words "0.2 per cent water" to indicate the suitability for shipping anhydrous ammonia in the cargo tank as authorized by § 177.817 of this subchapter, or

(ii) The words "NOT FOR Q AND T TANKS" when the anhydrous ammonia does not contain 0.2 per cent or more water by weight.

(2) *Liquefied petroleum gas.* The word "Non-corrosive" or "Non-cor" to indicate the suitability for shipment of the "Non-corrosive" liquefied petroleum gas offered for transportation by cargo tank as authorized by § 173.315(a)(1) Note 15 of this subchapter.

(i) *Transportation by water.* (1) Each shipment by water must have the following additional shipping paper entries:

(i) Identification of the type of packages such as barrels, drums, cylinders, and boxes.

(ii) The number of each type of package including those in a freight container or on a pallet, and

(iii) The gross weight of each type of package or the individual gross weight of each package.

(2) The shipping paper for a hazardous material offered for transportation by water to any country outside the United States must have in parenthesis the technical name of the material following the proper shipping name when the material is described by a "n.o.s." entry in § 172.101. For Example: Corrosive liquid, n.o.s. (caprylyl chloride), Corrosive material. However, for a mixture, only the technical name of any hazardous material giving the mixture its hazardous properties must be identified.

§ 172.204 Shipper's certification.

(a) *General.* Except as provided in paragraphs (b) and (c) of this section, each person who offers a hazardous material for transportation shall certify that the material offered for transportation in accordance with this subchapter by printing (manually or mechanically) the following statement on the shipping paper containing the required shipping description:

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

NOTE.—Preprinted certificates complying with 49 CFR 173.430(a) in effect on June 30, 1976, may be used through June 30, 1979. After June 30, 1979, use of the certificate required by this section is mandatory.

(b) *Exceptions.* No certification is required for hazardous material offered for transportation by highway that is transported—

(1) In a cargo tank supplied by the carrier, or

(2) By the shipper as a private carrier except for a hazardous material that is to be reshipped or transferred from one carrier to another.

(c) *Transportation by air.*—(1) *General.* Certification containing the following language may be used in place of the certification required by paragraph (a) of this section:

I hereby certify that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and in proper condition for carriage by air according to applicable national governmental regulations.

(2) *Certificate in duplicate.* Each person who offers a hazardous material to an aircraft operator for transportation by air shall provide two copies of the certification required in this section. (See § 175.30 of this subchapter.)

(3) *Passenger and cargo aircraft.* Each person who offers for transportation by air a hazardous material authorized for air transportation shall add to the certification required in this section the following statement:

This shipment is within the limitations prescribed for passenger aircraft, cargo-only aircraft (delete nonapplicable).

(4) *Radioactive material.* Each person who offers any radioactive material for transportation aboard a passenger-carrying aircraft shall sign (mechanically or manually) a printed certificate stating that the shipment contains radioactive material intended for use in, or incident to, research, medical diagnosis or treatment. This requirement does not apply to materials excepted under the provisions of § 175.10(a)(6) and (a)(8) of this subchapter.

(d) *Signature.* The certifications required by paragraph (a) or (c) of this section—

(1) Must be legibly signed by a principal, officer, partner, or employee of the shipper or his agent; and

(2) May be legibly signed manually, by typewriter, or by other mechanical means.

§ 172.300 [Amended]

§ 172.300 is amended by striking "in" and "section" in the first line and replacing with "by" and "subchapter" respectively, and by striking "§§ 172.302 and 172.316, and Part 173 of this subchapter," in the second and third lines;

a new sentence is added to read, "This section does not apply to portable tanks, cargo tanks and tank cars," at the end of the paragraph.

§ 172.302 [Amended]

In § 172.302 paragraph (b) is amended by changing the word "the" in the second line to "any" and the word "listed" in the last line to read "identified."

§ 172.306 [Amended]

In § 172.306 paragraph (a) is amended by inserting after the word "consignee" in the fourth line a revision to read "or consignor".

§ 172.312 [Amended]

In § 172.312 paragraph (b) is amended by adding the words "cylinders of liquefied compressed gas and" after the word "subchapter," in the second line and the introductory text of paragraph (c) is amended by adding "that is a liquid" at the close of the paragraph following the word "material" and preceding the period.

§ 172.316 [Amended]

In § 172.316 the section heading is revised to read, "Packagings containing material classed as ORM." The introductory text of paragraph (b) is amended by adding the words, "including the proper shipping name" following the word "marking" in the first line; paragraph (c) is amended by adding the word "described," following "properly" in the 4th line; reference "§ 172.200" in the last line is amended to read "§ 172.204".

§ 172.326 [Amended]

In § 172.326 paragraphs (a) (1) and (2) are deleted; the introductory text of paragraph (a) is amended by changing the last sentence to read, "This marking must be legibly displayed, as specified in this part, on two opposing sides." Paragraph (b) is amended to read, "(b) A portable tank marked with the name of a specific hazardous material may not be used to transport any other material unless the marking is removed, or changed to identify the hazardous material in the portable tank, whichever is appropriate."

§ 172.328 [Amended]

In § 172.328 paragraph (c) is amended by changing the first two words of the last sentence to, "These markings"; paragraph (d) is revised to read, "A cargo tank marked with the name of a specific hazardous material may not be used to transport any other material unless the marking is removed, or changed to identify the hazardous material the cargo tank contains, whichever is appropriate."

§ 172.330 [Amended]

In § 172.330 the introductory text of paragraph (a) is amended by adding the words, "to be marked" following "required" in the first line and by striking the word "and" and adding "or" in its place in the first line; paragraph (a)(2) is revised to read, "(2) Common name

authorized in this subchapter for the material such as "Refrigerant Gas."; paragraph (b) is amended by inserting the word "or" in the second line in front of the word "more"; paragraph (c)(1) is amended to read "(1) Affixed to both sides of the tank car; and"; paragraph (d) is revised read as follows: "(d) A tank car marked with the name of a specific hazardous material may not be used to transport any other material unless the marking is removed, or changed to identify the hazardous material the tank car contains, whichever is appropriate."

§ 172.400 [Amended]

In § 172.400 paragraph (a) is revised to read, "(a) Except as otherwise provided in this subchapter, each person who offers a package, overpack, or freight container containing a hazardous material for transportation shall label it, when required, with labels prescribed for the material as specified in § 172.101 and in accordance with this subpart."; paragraph (b)(1) is amended by deleting "Part 173 of" in the third line; paragraph (b)(2)(iii) is amended by deleting all of the words following "Appendix A" except the period at the end of the sentence; paragraph (b)(6) is amended by changing the reference to read "§ 172.514" and by deleting the semicolon at the end of the paragraph, substituting a comma therefor, and adding thereafter "or a portable tank having a capacity of less than 1,000 gallons which is placarded in accordance with § 172.514"; Paragraph (b)(11) is redesignated paragraph (c) and a new paragraph (b)(11) is added to read "(11) Cargo tank or tank car other than a multi-unit tank car tank." Redesignated paragraph (c) is amended by deleting "this paragraph" in the first line and substituting therefor "paragraph (b)".

§ 172.402 [Amended]

In § 172.402 paragraph (a) is revised to read "(a) *Multiple labeling.* Each package containing a material meeting the definition of more than one hazard class must be labeled as follows: (1) A material classed as an Explosive A, Poison A, or Radioactive material that also meets the definition of another hazard class, must be labeled as required for each class. (2) A Poison B liquid that also meets the definition of a Flammable liquid must be labeled POISON and FLAMMABLE LIQUID. (3) A material classed as Oxidizer, Flammable solid or Flammable liquid that also meets the definition of a Poison B must be labeled POISON in addition to the class label. (4) A material classed as a Flammable solid that also meets the definition of a water reactive material must have both the FLAMMABLE SOLID and DANGEROUS WHEN WET labels affixed. Paragraph (f) is amended by adding "§ 172.444 and" at the end of the first line; paragraph (i) is revised to read, "Labels for DOT specification 106 and 110 tanks. A DOT specification 106 or 110 tank must be labeled on each

end as required by this subchapter for the hazardous material it contains."

§ 172.403 [Amended]

In § 172.403 paragraph (c)(1) is revised to read, "(1) Package measuring more than 0.5 but not more than 50 millirem per hour at each point, and not exceeding one (1.0) millirem per hour at three feet from each point on the external surface of the package."; paragraph (f)(1) is deleted and a new paragraph (g) is added to read, "(g) The following applicable items of information must be entered in the blank spaces on the RADIOACTIVE label by legible printing (manual or mechanical), using a durable weather resistant means of marking:

(1) "Contents." The name of the radionuclides as taken from the listing of radionuclides in § 173.390 (symbols which conform to established radiation protection terminology are authorized, i.e., "Mo, "Co, etc.). For mixtures of radionuclides, the most restrictive radionuclides on the basis of radiotoxicity must be listed as space on the label allows.

(2) "Number of curies." Units shall be expressed in appropriate curie units, i.e., curies (Ci), millicuries (mCi) or microcuries (µCi) (abbreviations are authorized). For a fissile material, the weight in grams or kilograms of the fissile radioisotope also may be inserted.

(3) "Transportation index." (See § 173.389(i).)

§ 172.405 [Amended]

In § 172.405 amend the section designating the paragraph as (a) and by inserting paragraph (b) to read, "(b) For a package containing Chlorine, the word "CHLORINE" may be used in the place of the word "POISON" on the POISON label provided the letter size and color for CHLORINE are the same as those required for POISON; (1) A CHLORINE label may be used in place of the NON-FLAMMABLE GAS and POISON labels required for Chlorine by § 172.101."

§ 172.406 [Amended]

In § 172.406 paragraph (a) is amended by striking "name of contents" and substituting therefor "proper shipping name" in the 5th and 6th lines; paragraph (c) is amended by adding "or affixed" following "displayed" in the third line; and paragraph (e)(4) is added to read, "(4) Each portable tank having a rated capacity of less than 1,000 gallons, except when placarded in accordance with § 172.514(a)."

§ 172.407 [Amended]

In § 172.407 paragraph (e) is amended by adding a comma following the word "MATERIAL", in the 5th line.

§ 172.426 [Amended]

In § 172.426 paragraph (a) is amended by adding "(see § 172.405 for authorized label modification)" after the word "follows" and before the colon in the second line.

§ 172.430 [Amended]

In § 172.430 paragraph (a) is amended by adding "(see § 172.405 for authorized

label modification)" after the word "follows" and before the colon in the second line.

§ 172.432 [Amended]

In § 172.432 paragraph (c) is amended by deleting the words, "addition to" in the 4th line and substituting therefor, "place of", and by deleting the word "additional" in the 7th line.

§ 172.500 [Amended]

In § 172.500 paragraph (b) is revised to read:

(b) This subpart does not apply to—
(1) Etiologic agents.

(2) Hazardous materials classed as ORM-A, B, C, or D, or

(3) Hazardous materials authorized by this subchapter to be offered for transportation as Limited Quantities when identified as such on shipping papers in accordance with § 172.203(b).

§ 172.504 [Amended]

In § 172.504 paragraph (a) is amended by adding, "on each end and each side" following the word "placarded" in the 4th line; Footnote 2 following Table 1 is amended by adding, "EXPLOSIVES B" at the beginning of the footnote; in Table 2, column 2 the third entry "CHLORINE" is amended by adding a footnote 7 reference; Table 2 is further amended by inserting the entry "Non-flammable gas (Fluorine) in Column 1 and "POISON" in Column 2 following the entry "Nonflammable gas (Chlorine)—CHLORINE" on the third line; following Table 2, Footnote 3 is amended by deleting "110 gallons or more," and substituting therefor, "more than 110 gallons, a" following the words "capacity of" in the second line; "and water" is added at the close of Footnote 4; Footnote 5 is amended by adding, "Except when offered for transportation by water" at the beginning of the footnote and changing the article "A" to lower case; Footnote 7 is added to read, "CHLORINE placard required only for a packaging having a rated capacity of more than 110 gallons; the NON-FLAMMABLE GAS placard for packagings having a rated capacity of 110 gallons or less."; paragraph (b) is revised to read, "(b) A freight container, motor vehicle, or rail car containing two or more classes of materials requiring different placards specified in Table 2 may be placarded DANGEROUS in place of the separate placarding specified for each of those classes of material specified in Table 2. However, when 5,000 pounds or more of one class of material is loaded therein at one loading facility, the placard specified for that class in Table 2 must be applied. This paragraph does not apply to a portable tank, cargo tank, or tank car." Paragraph (c)(2) is amended by deleting the period and adding the words "or to transportation by air or water." at the end of the sentence following the words "tank cars."

§ 172.506 [Amended]

In § 172.506 the introductory text of paragraph (a) is amended by adding

"being offered" following the word "material" in the fifth line.

§ 172.510 [Amended]

In § 172.510 paragraph (b) is amended by changing the degrees C within the parentheses in the 4th line to read "(37.8° C)"; the introductory text of paragraph (c) is amended by adding the words "Last contained a Combustible liquid or" following the word "car" in the eighth line.

§ 172.512 [Amended]

In § 172.512 paragraph (a) is amended by deleting the words "required by this subpart" following "placards" in the 6th line and substituting therefor, "specified for the material in accordance with § 172.504"; Footnotes 1 and 2 following the table are revised to read, "Placarding exception for motor vehicles in § 172.504(c) applies"; "Placarding exception for motor vehicles in § 172.504(c) does not apply"; footnote 3 is added following footnote 2 to read, "Placarding exception for motor vehicles in § 172.504(c) applies following an air or water shipment immediately before delivery to a consignee"; Footnote 3 reference is added in the 5th column of the table on the 4th through the 12th lines; an "X" is substituted for the line under "Air" in the 9th and 14th lines; a new fifteenth line is added at the bottom of the table, consisting of a dashed line through the first three columns, an "X" in the fourth column (under "Water") and "Highway" in the last column; (c) is amended by adding a comma following ORM-D, in the 4th line.

§ 172.514 [Amended]

In § 172.514 paragraph (a) is amended by adding, "if placarded instead of labeled as provided in § 172.406(c) (4)" following "however" in the 6th line.

§ 172.519 [Amended]

In § 172.519 paragraph (d) is amended by deleting the words "CORROSIVE placard" in the next to the last sentence and by substituting therefor the words to read "NON-FLAMMABLE GAS, FLAMMABLE GAS and CORROSIVE placards"; paragraph (d) is amended further by deleting the last sentence and substituting therefor the sentence to read "The numbers on the NON-FLAMMABLE GAS, FLAMMABLE GAS and FLAMMABLE placards may be white, and numbers on the CORROSIVE placard should be white"; the Note following paragraph (e) is deleted and a new paragraph (g) is added to read, "(g) The dotted line at the outside of the ½-inch (12.7 mm.) white border on each placard is not part of the placard specification. However, a dotted or solid line outer border may be used when needed to indicate the full size of a placard that is part of a larger format or is on a background the color of which does not contrast with the placard color."

§ 172.521 [Amended]

In § 172.521 paragraph (b) is amended by placing a period after the word "triangle" in the 5th line, deleting the rest

of the sentence and substituting a new sentence therefor to read, "The placard center area and ½-inch (12.7 mm.) border must be white."

§ 172.525 [Amended]

In § 172.525 paragraph (a)(2) is amended by changing "172.436" in the 5th line to read "172.536", by changing "172.544" to read "172.546" and by adding "172.548", immediately before "172.550" in the 6th line; paragraph (b) is amended by adding, "specified in Appendix B to this Part and as" preceding "illustrated" in the 2nd line.

APPENDIX B [AMENDED]

In Appendix B paragraph (c) (1) is amended by changing "2 ½-inch (56.3 mm.)" to read "2 ¾ inches (56.4 mm.)"; paragraph (c) (2) is amended by deleting the period after the word "inches" in the 6th line and by adding "(38.1 mm.)" above the placard horizontal center line. The top of the letter "A" must be ½-inch (12.7 mm.) below the horizontal center line. The letter "A" must be approximately 2 inches (50.8 mm.) high. The base of the symbol must be 2 ¼ inches (52.4 mm.) above the placard horizontal center line, and must be 4 ½ inches (114.3 mm.) high when measured from a horizontal line touching the lowest extremity. The width of the symbol must be 7 ¾ inches (200.0 mm.) when measured between two lines perpendicular to the base line and touching the widest extremities on each side. The radius of the bomb must be ¾-inch (19.1 mm.). The placard color must be orange, black, and white. The headings of paragraphs (c) (3), (c) (4), and (c) (5) are deleted; paragraph (c) (4) is amended by deleting the measurements after the words "must be" in line 8 and substituting "1 ¾ inches (35.9 mm.)" therefor; paragraph (c) (7) is amended by changing "1 ½ inches (33.3 mm.)" in the 9th and 10th lines to read "1 ¾ inches (44.5 mm.)"; paragraph (c) (9) is amended by deleting the word "high" in line 10 and substituting the word "wide"; paragraph (c) (10) is amended by deleting all material starting with the word "Except" in the 12th line and continuing through "center line" in the 29th line and substitute the following therefor, "The base of the black triangle must be ¼-inch (6.3 mm.) above the top of the letters in the placard name. The base of the letters in the word EMPTY must be ¾ inches (22.5 mm.) above the placard horizontal center line"; paragraph (c) (12) is amended by deleting the sentence starting with "The red stripes—" on line 22 and continuing into line 25, and inserting therefor "Each red and white stripe must be approximately 1 inch (25.4 mm.) wide."

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

In Part 173 table of sections, § 173.145 the words "methyl hydrazine" are changed to read as one word, "methyldiazine"; 173.249a is added between 173.249 and 173.250 to read "173.249a Cleaning compound, liquid; coal tar dye,

liquid; dye intermediate, liquid; mining reagent, liquid; and textile treating compound mixture, liquid"; 173.353a is added to read, "173.353a Methyl bromide and nonflammable, nonliquefied compressed gas mixtures, liquid."; 173.358 is amended by adding "organic phosphorus compound;" in the third line preceding the word "parathion"; 173.359 is amended by adding "organic phosphorus compound mixtures;" in the fourth line preceding the word "parathion"; 173.377 is amended by adding "organic phosphorus compound mixtures;" in the fourth line preceding the word "parathion"; 173.391 is revised by striking out "small" and adding "limited" in its place; a new section is added to read, "173.610 Camphene," between 173.605 and 173.615.

In Part 173, the authority citation following the Table of Sections is amended to read as follows:

AUTHORITY:—18 U.S.C. 834, 46 U.S.C. 170 (7) (49 U.S.C. 1471, 1472(h) (1), 1807), 49 CFR 1.53 (a)-(h).

Following the authority citation located at the end of the Table of Sections "SUBPART A—GENERAL" is to be added and centered.

§ 173.2 [Amended]

In § 173.2 paragraph (a) is amended by changing "A" in the first line to "a"; by adding immediately preceding it the words "Except as provided in paragraph (b) of this section," and by deleting the words "or as specified in § 172.101 of this subchapter" in the third line. Paragraph (b) (4) is amended by deleting the words identified and classed in § 172.101 of this subchapter; placing a period after the word "peroxide" and adding the following, "(See § 172.101 and 173.151a of this subchapter)".

§ 173.3 [Amended]

In § 173.3 paragraph (a) is amended by striking the word "container" from the fourth line; by adding "of hazardous materials" between "storage" and the comma following it in line 5, and by adding a sentence to the end of this paragraph to read, "Methods of manufacture and related functions necessary for completion of a DOT specification packaging must be open to inspection by a representative of the Department."

§ 173.22 [Amended]

In § 173.22 paragraph (a) is amended by deleting "§ 173.6" in the sixth line and substituting § 171.12(c).

§ 173.28 [Amended]

In § 173.28 paragraphs (i) and (m) are amended by striking out the words "oxidizing materials" where they appear in line 7 and 9 respectively, and substituting therefor the words "organic peroxides, oxidizers,".

§ 173.29 [Amended]

In § 173.29 paragraph (f) is amended by striking "173.405," "173.422" and "173.420" and adding "172.411", "172.446" and "172.450," respectively; paragraphs (g) (i) and (ii) are redesignated (g) (1) and (2), respectively; paragraph (g) (1)

is amended by adding "except heater coil inlet and outlet pipes of empty tank cars" following "closed" in the first line.

§ 173.118 [Amended]

In § 173.118 paragraph (a) is amended by deleting the period following "subchapter" in the tenth line and adding thereafter "when packed according to the following paragraphs."; the last sentence is revised to read, "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817."

§ 173.130 [Amended]

§ 173.130 is amended by adding "limited quantities of" in the second line between "containing" and "15"; the last sentence is revised to read "In addition, shipments are not subject to subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817."

§ 173.145 [Amended]

In § 173.145 heading is amended by changing "methyl hydrazine" to "methyldiazine".

§ 173.147 [Amended]

In § 173.147 paragraph (b) is amended by changing "inhibited" in the first line to "inhibited" and by adding immediately preceding it "Limited quantities of"; the last sentence is revised to read "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817."

§ 173.150 [Amended]

§ 173.150 is amended by adding an "s" to the word "material" which appears at the end of the paragraph.

§ 173.151a [Amended]

The text of § 173.151a is revised to read as follows: "(a) An organic compound containing the bivalent —O—O— structure and which may be considered a derivative of hydrogen peroxide where one or more of the hydrogen atoms have been replaced by organic radicals must be classed as an organic peroxide unless: (1) The material meets the definition of an explosive A or explosive B, as prescribed in Subpart C of this part, in which case it must be classed as an explosive, (2) The material is forbidden to be offered for transportation according to § 172.101 or § 173.21 of this subchapter, (3) The material is not specifically identified as an organic peroxide in § 172.101 and meets the definition of a flammable liquid, or (4) According to data on file with the Materials Transportation Bureau, it has been determined that the material does not present a hazard in transportation."

§ 173.153 [Amended]

In § 173.153 the last sentence in paragraphs (a) and (b) is revised to read, "In addition, shipments are not subject

to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817."

§ 173.154 [Amended]

In § 173.154 the heading and paragraph (a) is amended by adding, "organic peroxide solids" between "solids" and "and" in the first line of each.

§ 173.162 [Amended]

In § 173.162 paragraph (a) is revised to read, "Limited quantities of charcoal, as described in this paragraph, are excepted from labeling (except when offered for transportation by air) and specification packaging requirements of this subchapter. In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817."

§ 173.176 [Amended]

In § 173.176 paragraph (g) is revised to read: "(g) Matches, strike-on-box, book, and card are not subject to Parts 170-189 of this subchapter if packed with no other articles in outside fiberboard or wooden boxes."; paragraph (h) is amended by changing "Matches" in the first line to "matches" and adding immediately "Limited quantities of"; the last sentence is revised to read "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817."

§§ 173.180 and 173.181 [Removed]

§§ 173.180 and 173.181 are deleted.

§ 173.182 [Amended]

§ 173.182 is amended by adding, a note following paragraph (a) (1): "NOTE 1. Nitro carbo nitrate is a mixture consisting substantially of inorganic nitrates and carbonaceous materials, in which none of the ingredients are explosive as defined in this part and which as packaged for shipment cannot be detonated by means of a No. 8 test blasting cap as described herein. (A No. 8 test blasting cap is one containing two grams of a mixture of 80 percent mercury fulminate and 20 percent potassium chlorate or a cap of equivalent strength.)"

§ 173.190 [Amended]

In § 173.190 paragraph (b) (3) is amended by deleting the last sentence of this paragraph and substituting the following in its place "After unloading, the tank must be filled to its entire capacity with an inert gas or to its entire capacity and dome to not more than 50 percent of its capacity with water having a temperature not exceeding 140° F. and placarded with "EMPTY-FLAMMABLE SOLID" placards as described in § 172.525 of this subchapter before the car is offered for return movement. (1) Each tank car must be marked "PHOSPHORUS" in accordance with the requirements of § 172.330 of this subchapter."

§ 173.206 [Amended]

In § 173.206 paragraph (d) is revised to read, "Limited quantities of lithium metal in cartridges or rubidium metal in cartridges is excepted from labeling (except when offered for transportation by air) and specification packaging requirements, when packaged according to the following paragraph. In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817."

§ 173.217 [Amended]

In § 173.217 the first and third lines of the heading and the first and second lines of paragraph (a) are amended by striking "compound" and substituting "mixture"; paragraph (b) is amended by changing "Strong" in the first line to "strong" and by adding immediately preceding it "Limited quantities of these materials in"; and the last sentence is revised to read, "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817."

§ 173.220 [Amended]

In § 173.220 paragraphs (a) (2) and (b) (1) are amended by changing "Magnesium" to "magnesium" in the first line and by adding immediately preceding it "Limited quantities of"; and the last sentence is revised to read, "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817."

§ 173.223 [Amended]

In § 173.223 paragraph (b) is amended by changing "Peracetic" in the first line to "peracetic" and by adding immediately preceding it "Limited quantities of"; and the last sentence is revised to read "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter, except § 177.817."

§ 173.225 [Amended]

In § 173.225 paragraph (a) is amended by adding "phosphorus pentasulfide" preceding "and" in the second line.

§ 173.226 [Amended]

In § 173.226 paragraph (b) is amended by changing "Thorium" to "thorium" in the first line and by adding immediately preceding it "Limited quantities of"; and the last sentence is revised to read, "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817."

§ 173.229 [Amended]

In § 173.229 paragraph (b) is amended by changing "Chlorate" in the first line to "chlorate" and adding immediately preceding it "Limited quantities of"; and the last sentence is revised to read, "In

addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817."

§ 173.232 [Amended]

In § 173.232 paragraph (b) is amended by changing "Metallic" in the first line to "metallic" and adding immediately preceding it "Limited quantities of"; and the last sentence is revised to read, "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter, except § 177.817."; paragraph (c) (1) is amended by striking "500 gross pounds weight" and substituting "650 net weight"; paragraph (c) (2) is deleted; paragraphs (c) (3), (4), (5), and (6) are redesignated paragraphs (c) (2), (3), (4), and (5) respectively; redesignated paragraph (c) (3) is amended by striking "55 pounds weight" and substituting "100 net weight"; redesignated paragraph (c) (4) is amended by striking "450 pounds gross weight" and substituting "650 net weight"; redesignated paragraph (c) (5) is amended by striking "75 pounds gross weight" and substituting "650 net weight"; and new paragraphs (c) (6) and (c) (7) are added to read, "(6) Portable tanks, not over 5,000 pounds gross weight, (7) In bulk in rail cars and cargo tanks."

§ 173.244 [Amended]

In § 173.244 the last sentence of paragraph (a) is revised to read, "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817."

§ 173.245 [Amended]

In § 173.245 paragraph (b) is amended by striking "not subject to" and adding "excepted from" in the sixth and seventh lines.

§ 173.249 [Amended]

In § 173.249 the Heading is revised to read "Alkaline corrosive liquids, n.o.s.; Alkaline liquids, n.o.s.; Alkaline corrosive battery fluid; Potassium fluoride solution; Potassium hydrogen fluoride solution; Sodium aluminate, liquid; Sodium hydroxide solution; Potassium hydroxide solution; Boiler compound solution"; and the introductory text of paragraph (a) is revised to read, "Alkaline corrosive liquids, n.o.s.; Alkaline liquids, n.o.s.; Alkaline corrosive battery fluid; Potassium fluoride solution; Potassium hydrogen fluoride solution; Sodium aluminate, liquid; Sodium hydroxide solution; Potassium hydroxide solution; Boiler compound solution when offered for transportation by carriers by rail freight, highway or water must be packed in specification containers of a design and constructed of materials that will not react dangerously with or be decomposed by the chemical packed therein as follows: paragraph (c) is amended by changing "Alkaline" in the first line to "alkaline" and adding immediately preceding it "Limited quantities of"; and

the last sentence is revised to read, "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817."

§ 173.250 [Amended]

In § 173.250 paragraph (a) is amended by adding ", (2)" between "(1)" and "and" in the seventh line, and "on the vehicle" in the 11th line is amended to read "such vehicle".

§ 173.260 [Amended]

In § 173.260 paragraph (e) is amended by adding "or rail" following the word "highway" in the 4th line.

§ 173.261 [Amended]

In § 173.261 paragraph (b) is amended by changing "Fire-extinguisher" to "fire-extinguisher" in the first line and adding immediately preceding it "Limited quantities of"; and the last sentence is revised to read, "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter, except § 177.817."

§ 173.263 [Amended]

In § 173.263 paragraph (b) (2) is amended by changing "inside" in the first line to "inside" and by adding immediately preceding it "Limited quantities of these materials in"; and the last sentence is revised to read, "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter, except § 177.817."

§ 173.264 [Amended]

In § 173.264 paragraph (a) (8) the reference to specification "103W" in the first line is changed to read "103AW" and the reference to "111A100W2" in the second line is changed to read "111A60W2".

§ 173.266 [Amended]

In § 173.266 paragraph (c) (1) is amended by striking "Class" and substituting "Glass" in the second line, and paragraph (b) is amended by adding the following eight numbered paragraphs after the colon: "(1) Spec. 15A, 15B, 15C, 16A, or 19A (§§ 178.168, 178.170, 178.185, 178.190 of this subchapter). Wooden boxes with glass or earthenware inside containers of not more than 1 gallon capacity each. Inside containers must be well cushioned. All material used for cushioning must be noncombustible mineral matter, such as whiting, mineral wool, infusorial earth, asbestos, or sifted ashes. Cushioning of inside containers in outside wooden boxes by means of elastic packing, such as wooden strips or large corks fastened securely in position, is authorized if the completed package will pass the swing test prescribed for boxed carboys in spec. 1A (§ 178.1 of this subchapter). (2) Spec 34B (§ 178.12 of this subchapter). Aluminum carboys. (3) Spec 42D (§ 178.109 of this subchapter).

Aluminum drums with vented closure in top head; not over 55 gallons capacity. Top heads must be plainly marked "Keep This End Up" or "Keep Plug Up To Prevent Spillage." (4) Spec 42E (§ 178.136 of this subchapter). Aluminum drums (single-trip). (5) Specification 12B (§ 178.205 of this subchapter). Fiberboard boxes with Specification 2E (§ 178.24a of this subchapter) inside polyethylene bottles having vented screw-cap closures not over 16-ounce capacity each. Each bottle must be completely contained in a securely closed polyethylene bag or tube constructed of material having minimum film thickness of 0.004 inch. Bottles must be separated from each other by use of fiberboard partitions or other suitable cushioning material. Not more than 12 bottles may be packaged in one box. (6) Spec. 6D or 37M (nonreusable container) (§ 178.102 or 178.134 of this subchapter). Cylindrical steel overpacks with inside spec. 2S or 2SL (§ 178.35 or 178.35a of this subchapter) polyethylene container. The closures must be located in one head and must be vented to prevent accumulation of internal pressure and head plainly marked "KEEP THIS END UP" or "KEEP PLUG UP TO PREVENT SPILLAGE." (7) Spec 21P (§ 178.225 of this subchapter). Fiber drum over pack with inside spec. 2SL (§ 178.35a of this subchapter) polyethylene container, not over 30 gallons capacity, or spec. 2U (§ 178.24 of this subchapter) polyethylene container not over 15 gallons capacity. The closures of the inside 2SL and 2U container must be vented to prevent accumulation of internal pressure and the head with the closure must be marked "KEEP THIS END UP" or "KEEP PLUG UP TO PREVENT SPILLAGE." (8) Specification 34 (§ 178.19 of this subchapter). Polyethylene container without overpack, not over 30-gallon capacity. A closure of each container must be vented to prevent accumulation of internal pressure and the head with the closure must be marked "KEEP THIS END UP."

§ 173.272 [Amended]

In § 173.272 paragraph (b) is amended by changing "Sulfuric" in the first line to "sulfuric" and adding immediately preceding it "Limited quantities of"; and the last sentence is revised to read, "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817."

§ 173.277 [Amended]

In § 173.277 paragraphs (d) and (e) are amended by changing "Glass" and "Polyethylene" in the first line to "glass" and "polyethylene" and adding immediately preceding both words "Limited quantities of this material in"; and the last sentence is revised to read, "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter, except § 177.817." in each of the paragraphs.

§ 173.279 [Amended]

In § 173.279 paragraph (b) is amended by changing "Inside" in the first line to "inside" and adding immediately preceding it "Limited quantities of this material in"; and the last sentence is revised to read, "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817."

§ 173.286 [Amended]

In § 173.286 paragraph (b) is amended by adding "limited quantities of" between "containing" and "corrosive" in the first line and the last sentence is revised to read, "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817."

§ 173.306 [Amended]

In § 173.306 paragraph (a) the last sentence is revised to read "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817"; paragraph (b) is amended by changing "Compressed" in the third line to "compressed" and adding immediately preceding it "Limited quantities of"; and the next to the last sentence is revised to read, "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter, except § 177.817"; paragraph (c) is amended by adding "limited quantities of" between "with" and "a" in the second line and the last sentence of the introductory text is revised to read, "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817"; paragraph (d) (3) is added to read as follows, "(3) A cylinder which is a component part of a passenger restraint system and is installed in a motor vehicle, charged with nonliquefied, nonflammable compressed gas and having no more than two actuating cartridges per value, is excepted from the requirements of Parts 170-189 of this subchapter except: (i) Unless otherwise authorized by the Department, each cylinder must be in compliance with one of the cylinder specifications in Part 178 and authorized for use in § 173.302 for the gas it contains; (ii) Each cylinder must be in compliance with the filing requirements of § 173.301; and (iii) Each actuating cartridge must be approved in accordance with § 173.86 and meet the definition set forth in § 173.100(w). NOTE.—A cylinder containing a gas generator may be included within the provisions of this exception if the requirements of § 173.34(d) are satisfied."; the introductory text of paragraph (e) (1) is amended by revising the last sentence to read "In addition, shipments are not subject to Subpart F of Part 172 of this

subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817"; paragraph (f) is revised to read, "(f) Accumulators. The following applies to accumulators, which are hydraulic accumulators containing nonliquefied, nonflammable gas, and nonflammable liquids or pneumatic accumulators containing nonliquefied, nonflammable gas, fabricated from materials which will not fragment upon rupture:" paragraph (f) (1) is amended by changing "accumulators" in the first line to "Accumulators" and deleting "Hydraulic"; paragraph (f) (2) is amended by changing "accumulators" in the first line to "Accumulators" and deleting "Hydraulic"; by adding "with limited quantities of compressed gas" following the first line and the last sentence is revised to read, "In addition, shipments are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817"; paragraph (f) (3) is amended by changing "accumulators" in the first line to "Accumulators" and deleting "Hydraulic."

§ 173.308 [Amended]

In § 173.308 paragraph (b) is added to read, "When no more than 1,500 devices covered by this section are transported in one motor vehicle by highway, the requirements of Parts 172 and 177 of this subchapter do not apply."

§ 173.326 [Amended]

In § 173.326 paragraph (a) is amended by striking "Lewisite", "Mustard Gas" and "Phenylcarbylamine Chloride".

§ 173.327 [Amended]

In § 173.327 paragraph (e) is revised to read, "Unless otherwise specified in this subchapter, packaging used for the transportation of any Poison A material may not be completely filled. Sufficient outage must be provided so that the packaging will not be liquid full at 130° F. (55° C.)."

§ 173.344 [Amended]

In § 173.344 paragraph (b) (1) is amended by adding "be" between "not" and "liquid" in the third line.

§ 173.353 [Amended]

In § 173.353 paragraph (a) is amended by striking the words "methyl bromide and nonflammable, nonliquefied compressed gas mixtures, liquid" and by striking the word "or" from the fifth line and placing it between the semi-colon and the word "methyl" in the third line.

A new § 173.353a is added to read:

§ 173.353a Methyl bromide, liquid, and nonflammable, nonliquefied compressed gas mixtures.

(a) Methyl bromide, liquid and nonflammable, nonliquefied compressed gas mixtures must be packed in specification containers as noted in § 173.353(a) (2), (3), (4), (5), (6), and (c).

(b) Liquid may contain 2 percent or less by weight chloropicrin.

§ 173.358 [Amended]

In § 173.358 the heading and paragraph (a) are amended by deleting the reference to "n.o.s." in the third line of each and by adding the words "organic phosphate compound" between "parathion" and "organic" in the second line of each; the following twelve numbered paragraphs are added after the colon at the end of paragraph (a): "(1) Spec. 5, 5A, or 5B (§§ 178.80, 178.81, 178.82 of this subchapter). Metal barrels or drums, with openings not exceeding 2.3 inches in diameter. (2) Spec. 17C or 17E (§§ 178.115, § 178.116 of this subchapter). Metal drums (single-trip), with openings not exceeding 2.3 inches in diameter. Spec. 17E drums authorized for not over 5 gallons capacity each. (3) Spec. 15A or 15B (§§ 178.168, 178.169 of this subchapter). Wooden boxes, with metal inside containers of not over 5 gallons capacity each. (4) Spec. 12B (§ 178.205 of this subchapter). Fiberboard boxes, with inside glass bottles not over 1 gallon capacity each, securely cushioned in liquid-tight metal cans. (5) Spec. 21C (§ 178.224 of this subchapter). Fiber drums, with inside glass containers not over 1 gallon capacity each. (6) Spec. 37A (§ 178.131 of this subchapter). Metal drums (single-trip), with inside glass containers not over 1 gallon capacity each. (7) Cylinders as prescribed for any compressed gas, except acetylene, are also authorized. (8) Spec. 12B § 178.205 of this subchapter). Fiberboard boxes with not more than one inside glass container of not over 1 gallon capacity, securely cushioned. Completed package, with glass container filled with water, when closed for shipment, must be capable of withstanding six four-foot drops onto solid concrete in the order bottom, four sides and top without breakage. (9) Spec. 12B (§ 178.205 of this subchapter). Fiberboard boxes with not more than one inside container of polyethylene, or other nonfragile plastic material, and closed by a screw cap of similar material, not over 16 ounces, surrounded by absorbent cushioning and packed in a one gallon securely closed metal can which shall be surrounded with absorbent cushioning material within the outside fiberboard box. (10) Spec. 42B (§ 178.107 of this subchapter). Aluminum drums. (11) Specification 105A300W (§§ 179.100, 179.101 of this subchapter). Tank cars. Authorized for parathion and methyl parathion only. The nominal water capacity of a tank car must not exceed 12,000 gallons. (12) Specification 6D (§ 178.102 of this subchapter). Cylindrical steel overpack with an inside specification 2S (§ 178.35 of this subchapter) polyethylene container. Each full removable head overpack over 5 gallons capacity must be closed by means of a 12-gage steel bolted ring closure with drop forged lugs, one of which is appropriately threaded. For an overpack not over 30 gallons capacity, the threaded lug must have at least a 3/8-inch bolt and locking nut, and for an overpack over 30 gallons capacity the bolt and locking nut must be at least 3/8-inch. Authorized only for materials

that will not react with polyethylene and result in container failure."

§ 173.359 [Amended]

In § 173.359 the heading is amended by deleting "n.o.s." in the fourth line and "n.o.s." in the fifth line; paragraph (a) is amended by deleting the reference to "n.o.s." in the fourth line; paragraph (b) is amended by deleting the reference to "n.o.s." in the fourth and eleventh lines; paragraph (c) is amended by striking the word "expected" and substituting "excepted" in the nineteenth line.

§ 173.364 [Amended]

In § 173.364 paragraph (a)(3) is amended by striking "exemption" and substituting "exception" in the second line; by adding "organic phosphorus compound mixtures," between "mixtures," and "and" in the fifth line; by deleting the reference to "n.o.s." in the last line.

§ 173.368 [Amended]

In § 173.368 paragraph (a) is amended by striking out "cars" and substituting "transport vehicles" in the tenth and eleventh lines; paragraph (a)(2) is amended by striking out ", and;" at the end of the paragraph and substituting a period; paragraph (a)(3) is amended by replacing the period with a comma at the end of the paragraph and adding the word "or"; a new paragraph (4) is added to read, "Sift-proof, self-clearing, hopper-type or dump-type motor vehicles having bodies with waterproof and dust-proof covers well secured in place."; in paragraph (b) strike "cars" and substitute "Transport vehicles" in the first line and add "or § 177.841" after "§ 174.615" in the fifth line.

§ 173.377 [Amended]

In § 173.377 the heading and paragraphs (a) and (b) are amended by deleting the reference to "n.o.s." in the fourth and fifth lines of each; paragraph (f) is amended by deleting the reference to "n.o.s." in the fifth and sixth lines; paragraphs (g) and (h) are amended by deleting the reference to "n.o.s." in the sixth and seventh lines; paragraph (i) is amended by deleting the reference to "n.o.s." in the fifth and seventh lines; paragraphs (g)(1), (h)(1), and (i)(1) are amended by striking the word "chapter" and substituting the word "subchapter".

In § 173.391 the heading and the introductory portions of paragraphs (a), (b), (c), and paragraph (d) are revised to read:

§ 173.391 Limited quantities of radioactive materials and radioactive devices.

(a) Limited quantities of radioactive materials in normal form not exceeding 0.01 millicurie of Group I radionuclides; 0.1 millicurie of Group II radionuclides; 1 millicurie of Groups III, IV, V, or VI radionuclides; 25 curies of Group VII radionuclides; tritium oxide in aqueous

solution with a concentration not exceeding 0.5 millicuries per milliliter and with a total activity per package of not more than 3 curies; or 1 millicurie of radioactive material in special form; and not containing more than 15 grams of uranium-235 are excepted from specification packaging, marking, and labeling, and are excepted from the provisions of § 173.393, if the following conditions are met:

(b) Manufactured articles such as instruments, clocks, electronic tubes or apparatus, or other similar devices, having limited quantities of radioactive materials (other than liquids) in a non-dispersible form as a component part, are excepted from specification packaging, marking, and labeling, and are excepted from the provisions of § 173.393, if the following conditions are met:

(c) A manufactured article, other than a reactor fuel element, in which the only radioactive material is metallic natural or depleted uranium or natural thorium or alloys thereof, is excepted from specification packaging, marking, and labeling, and is excepted from the provisions of § 173.393, if the following conditions are met:

(d) Shipments made under this section for transportation are not subject to Subpart F of Part 172 of this subchapter, to Part 174 of this subchapter except § 174.24 and to Part 177 of this subchapter except § 177.817.

§ 173.393 [Amended]

In § 173.393 a new paragraph (p) is added as follows:

(p) No person may offer for transportation aboard a passenger carrying aircraft any radioactive material unless that material is intended for use in, or incident to, research, or medical diagnosis or treatment, or is excepted under the provisions of § 175.10 of this subchapter.

§ 173.426 [Amended]

In § 173.426 paragraph (a) is amended by striking "pressure" and substituting "presence" in the last line.

§ 173.432 [Amended]

In § 173.432 paragraph (a) is amended by striking "poison" in the second line.

§ 173.501 [Removed]

§ 173.501 is deleted.

A new § 173.610 is added to read:

§ 173.610 Camphene.

(a) Camphene, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged in a wooden, metal, or rigid plastic packaging.

(b) Camphene, when offered for transportation by air, must be prepared for shipment in compliance with § 173.510 and must be packaged as prescribed in § 173.154.

§ 173.620 [Amended]

In § 173.620 paragraph (a)(6) is added to read:

(6) Specification 51 (§ 178.245 of this subchapter). Portable tanks. Not authorized for transportation by air.

§ 173.650 [Amended]

In § 173.650 paragraph (a)(1) is revised to read:

(1) As prescribed in §§ 173.363, 173.364 and 173.365, meeting the packaging requirements applicable to Poison B solids.

§ 173.948 [Removed]

§ 173.948 is deleted.

§ 173.1200 [Amended]

§ 173.1200 paragraph (a) is amended by striking the words "a special exception is" in the sixth and seventh lines and substituting "an ORM-D exception"; paragraph (a)(2)(iii) is added to read, "(iii) In metal or plastic inside containers, each having a rated capacity of not over 1 quart, packed in strong outside packagings provided the liquid mixture contains 10 percent or less corrosive material and the remainder of the mixture does not meet the definition of a hazardous material as defined in the subchapter. Not authorized for transportation by air."; paragraph (a)(3)(ii) is amended by deleting the words "metal, wooden, or fiberboard" following the word "strong" in the fourth and fifth lines; paragraph (a)(3)(iii) is added to read, "(iii) In metal, rigid fiber, or composition cans or cartons or rigid plastic containers, each having a rated capacity of not over 20 pounds, overpacked in metal, wooden or fiberboard outside containers not exceeding 50 pounds net weight provided the solid mixture contains 10 percent or less corrosive material and the remainder of the mixture does not meet the definition of a hazardous material as defined in this subchapter."

Paragraph (a)(4) is amended by adding "except for charcoal briquettes" between "solids" and "must" in the first line and adding a new sentence at the end of the paragraph to read, "Charcoal briquettes may be shipped in packagings having a net weight of 65 pounds or less"; paragraph (a)(6)(i) is revised to read, "(i) In inside containers which must be securely packed and cushioned with noncombustible cushioning material in strong outside packagings containing not over 1 pint or 1 pound net quantity of the materials. Cushioning is not required when the liquid is contained in strong, securely closed, plastic packagings, not over 1 ounce capacity each, properly packed to prevent leakage or breakage."

APPENDIX A [AMENDED]

Appendix A was deleted from 49 CFR and a new Appendix A was added in the FEDERAL REGISTER of April 15, 1976. In the Appendix, the heading is amended by striking "D" and substituting "A". Paragraph 7 is amended by striking "alternation" and substituting "alteration" in the fourth line.

PART 174—CARRIAGE BY RAIL

In Part 174 table of sections is amended by adding "freight" preceding "containers" in § 174.61; deleting the word "MATERIALS" in § 174.89; changing the word "training" to read "train" in § 174.91; changing "explosives" to read "Explosives A" in § 174.114; changing "Oxidizing Materials" to read "Oxidizers" in Subpart I Heading and § 174.580.

§ 174.1 [Amended]

§ 174.1 is amended by deleting the words "by carriers" in the fourth line.

§ 174.3 [Amended]

§ 174.3 is amended to add "171," to the third line following the word "Parts" and by deleting the period at the end of the paragraph and adding "except as provided in § 174.47(b).".

§ 174.5 [Amended]

§ 174.5 is amended by adding a new sentence at the close of the paragraph to read, "The requirements of this subchapter do not apply to railway track torpedoes and fuses, carried in engines or rail cars for signaling purposes if contained in closed metal boxes when not in use."

§ 174.8 [Amended]

In § 174.8 paragraph (a) is amended by adding a comma following the word "materials" in the second line; paragraph (b) is amended by deleting the period at the end of the paragraph and adding, "or other shipping document as required by Section 174.26(b).".

§ 174.10 [Amended]

§ 174.10 paragraph (c) is amended by deleting that part of the last sentence beginning with and following the word "stating" and substituting therefor, "placarded" followed by the name of the placard."

§ 174.25 [Amended]

In § 174.25 paragraph (a) is amended by adding after the word "prepared" in line 3 "by the carrier"; by adding after the word "marked" in the eleventh line "by the carrier"; paragraph (a) (1) is deleted and paragraph (a) (3) is renumbered as (a) (1) with the period at the end of the sentence changed to a semicolon followed by the word "and"; paragraph (a) (2) is amended to read "(2) The placard endorsement specified in the following table for the hazardous material or class concerned near the space on the face of the billing provided for the car number — (i) In letters not less than 5/8 of an inch high, or (ii) In bold, upper case letters not less than 1/10 of an inch high inside a rectangle made with asterisks (*) or the symbol for number (#), and not closer to the endorsement than 1/8 of an inch on all sides." The table in § 174.25(a) (2) is amended as follows: (1) The heading to column one is amended to read "Hazardous material or class"; the last entry in column one is amended by deleting the period and adding at the end of the sentence "other than a Combustible liquid." The second column is amended by adding the word "Placarded" im-

mediately before each entry in the column except the final entry. Paragraphs (b) (1) through (b) (6) are amended to read "(1) The proper shipping name specified in § 172.101 of this subchapter; (2) The hazard class specified in § 172.101 of this subchapter; (3) The total quantity (by weight, volume, or as otherwise appropriate) of the hazardous material covered by the description; (4) The shipper's certification and signature specified in § 172.204 of this subchapter; (5) The placard notation specified in the Table in § 174.25(a); and (6) The placard endorsement specified in the Table in § 174.25(a)."

Paragraph (c) is amended by deleting the remainder of the paragraph after "the" in the fourth line and substituting the words "EMPTY: Last contained", followed by the name of the hazardous material last contained in the tank car. For example: EMPTY: Last Contained NITRIC ACID."; paragraph (d) is amended by changing the word "explosives" to read "Explosives A" in the 5th, 6th, and 7th lines.

§ 174.26 [Amended]

In § 174.26 paragraph (a) is amended by deleting the last sentence and substituting therefor, "See paragraph (b) of this section for other placarded cars."

§ 174.56 [Removed]

§ 174.56 is deleted in its entirety.

§ 174.61 [Amended]

In § 174.61 the Heading is amended by inserting the word "freight" preceding "containers"; in the first line of paragraph (a) the word "freight" is inserted preceding "container"; in the first and eighth lines of paragraph (b) the word "freight" is inserted preceding "container".

§ 174.63 [Amended]

§ 174.63 paragraph (a) the word "portable" is inserted preceding "tank" in the last line.

§ 174.67 [Amended]

In § 174.67 paragraph (a) the word "conditions" in the second line is deleted and "rules" substituted therefor.

§ 174.81 [Amended]

In § 174.81, paragraph (a), the Table is amended by changing, in the left hand column, the caption "OTHER DANGEROUS ARTICLES" to "OTHER HAZARDOUS MATERIALS" and in the fourth and fifth lines under that caption by changing the words "oxidizing materials" to read "oxidizer"; by deleting all of the last entry except "Radioactive materials" under "OTHER HAZARDOUS MATERIALS"; and by changing "gcX" to read "aX" in column d opposite "11."

§ 174.83 [Amended]

In § 174.83 paragraph (a) the word "loaded" is added preceding "placarded" in the 13th line.

§ 174.86 [Amended]

In § 174.86 the word "explosives" is deleted and "EXPLOSIVES A" substituted therefor in the last sentence.

§ 174.89 [Amended]

In § 174.89 the word "MATERIALS" is deleted from the Heading, second and 8th lines.

§ 174.90 [Amended]

In § 174.90 paragraph (a) (2) is amended by deleting the word "(COMBUSTIBLE)" and adding in place therefor, "with the same placard or one placarded 'COMBUSTIBLE'".

§ 174.91 [Amended]

§ 174.91 is amended by adding "of the train" in the 9th line following "middle".

§ 174.92 [Amended]

In § 174.92 the first paragraph is designated "(a)"; the word "MATERIALS" is deleted in paragraph (a) (2).

Section 174.93 is revised to read:

§ 174.93 Position in train of empty placarded tank cars.

In a moving or standing train, empty placarded tank cars, except empty tank cars last containing combustible liquid, may not be placed nearer than the second car from the engine or occupied caboose.

§ 174.101 [Amended]

In § 174.101 paragraph (h) the word "station" in the 11th line is changed to read "stations"; in the 1st line of paragraph (i) "or" is changed to "of".

§ 174.104 [Amended]

In § 174.104 paragraph (b) (1) is revised to read, "(1) The car must be equipped with air brakes, hand brakes, and roller bearings which are in condition for service." Paragraph (b) (5) is amended by deleting "or journal boxes," in the first and second lines, and deleting the entire last sentence of the paragraph; in paragraph (f) "125" in the Car Certificate is changed to read "215", and "No. 3" is moved to align with "No. 1" and "No. 2". Note 2 is added following Note 1 at the end of the section to read, "Note 2: Car certificates remaining on hand as of the effective date of these regulations may be used until stocks are exhausted but not after July 1, 1977."

§ 174.110 [Amended]

§ 174.110 is amended by adding "when the magazine contains Explosives A" preceding the period at the close of the section.

§ 174.114 [Amended]

In § 174.114 the word "explosives" is deleted from the Heading and the second line of paragraph (a) and "Explosives A" is substituted therefor.

§ 174.201 [Amended]

In § 174.201 paragraph (c) is amended by adding "gondola cars and flat cars" preceding the period at the end of the first sentence.

§ 174.204 [Amended]

In § 174.204 paragraph (a) "174.22(f)" is changed to read "171.8" in the 4th line; in paragraph (a) (1) the word "not" is added following "may" in the 3rd and 4th lines; and "(See Section 171.8.)" is added at the close of paragraph (a) (2).

§ 174.290 [Amended]

In § 174.290 paragraph (b) (2) the word "section" is changed to read "subchapter"; in (b) (3) the word "on" is changed to read "or" in the first line.

§ 174.410 [Amended]

In § 174.410 paragraph (d) the word "be" is changed to read "the" in the 19th line preceding "outside."

§ 174.580 [Amended]

In § 174.580 "oxidizing materials" is changed to read "oxidizers" in the Heading and "oxidizing material" is changed to "oxidizer" in the second line.

§ 174.680 [Amended]

Section 174.680 is amended by deleting the word "toxic" in the second line.

§ 174.700 [Amended]

In § 174.700 the last sentence of paragraph (b) is revised to read, "This provision does not apply to exclusive use shipments as described in §§ 173.389(o) and 173.392, 173.393(j), or 173.396(f)."; in paragraph (c) the headings in the table are amended to read as follows: "Minimum separation distance" is changed to read "Minimum separation distance in feet to nearest undeveloped film", "Minimum distance" is changed to read "Minimum distance in feet to area of persons, or minimum distance in feet from dividing partition of a combination car."; in paragraph (e) the period at the end of the paragraph is changed to a colon.

§ 174.715 [Amended]

In § 174.715 paragraph (a) is revised to read as follows: "Each transport vehicle used for transporting radioactive materials as exclusive use, as defined in § 173.389(e), must be surveyed with appropriate radiation detection instruments after each use. A vehicle may not be returned to service until the radiation dose rate at any accessible surface is 0.5 millirem per hour or less, and there is no significant removable radioactive surface contamination, as defined in paragraph (a) of this section.

§ 174.810 [Amended]

In § 174.810 next to the last sentence in paragraph (b) is changed to read, "They may be transported in a gondola car or on a flat car." Paragraph (c) is added to read, "(c) Wet electric storage batteries are not authorized in refrigerator or 'plug-door' type cars."

§ 174.812 [Amended]

In § 174.812 paragraph (b) the word "incombustible" in the last line is changed to read "noncombustible".

PART 175—CARRIAGE BY AIRCRAFT

In Part 175, the authority citation following the table of sections is amended to read as follows:

AUTHORITY: (49 U.S.C. 1471, 1472(h) (1), 1807), 49 CFR 1.53(h).

§ 175.10 [Amended]

In § 175.10 paragraph (a) (2) and (a) (2) (vi) are revised, paragraph (a) (4) (1)

is amended, and paragraphs (a) (9) and (a) (10) are added to read: "(2) Aircraft parts, equipment, and supplies (other than fuel) carried by an aircraft operator if authorized or required aboard his aircraft for their operation including: "(vi) Non-spillable batteries;" paragraph (a) (4) (i) is amended by deleting the words "for the carriage of those articles" in the third line; (a) (9) is added to read "Smoke grenades, flares, or similar devices carried only for use during a sport parachute jumping activity." (a) (10) is added to read, "Personal smoking materials intended for use by any individual when carried on his person except lighters with flammable liquid reservoirs and containers containing lighter fluid for use in refilling lighters."

§ 175.30 [Amended]

In § 175.30 paragraph (a) (2) is amended by adding the words, "for 90 days" preceding the semicolon at the close of the paragraph; paragraph (b) is changed to read as follows: "(b) Except as provided in paragraph (c), no person may carry any hazardous material aboard an aircraft unless, prior to placing the material aboard the aircraft, the operator of the aircraft has inspected the package, or the outside container prepared in accordance with § 173.25 of this subchapter which contains the material, and has determined that—it has no dents, holes, leakage, or other indication that its integrity has been compromised, and for radioactive materials that the package seal has not been broken."

Section 175.33 is revised to read as follows:

§ 175.33 Notification of pilot-in-command.

When materials subject to the provisions of this subchapter are carried in an aircraft, the operator of the aircraft shall give the pilot-in-command the following information in writing before takeoff:

(a) The information required by § 172-202 and 172.203 of this subchapter;

(b) The location of the hazardous material in the aircraft; and

(c) The results of the inspection required by § 175.30(b).

§ 175.45 [Amended]

In § 175.45 paragraph (a) (7) is amended by adding "except § 171.15(c)" following the reference to § 171.15 in the third line.

Section 175.75 is revised to read as follows:

§ 175.75 Quantity limitations aboard aircraft.

(a) Except as provided in § 175.85(b), no person may carry on an aircraft—

(1) A hazardous material except as permitted in Part 172 of this subchapter;

(2) More than 50 pounds net weight of hazardous material (and in addition thereto, 150 pounds net weight of non-flammable compressed gas) permitted to be carried aboard passenger-carrying aircraft—

(i) In an inaccessible cargo compartment,

(ii) In any freight container within an accessible cargo compartment, or

(iii) In any accessible cargo compartment in a cargo-only aircraft in a manner that makes it inaccessible unless in a freight container;

(3) Packages containing radioactive materials when their combined transport indices exceed 50.

(b) No limitation applies to the number of packages of ORM material aboard an aircraft.

§ 175.85 [Amended]

In § 175.85, the introductory text of paragraph (b) is revised as follows:

"(b) Each person carrying materials acceptable only for cargo-only aircraft shall carry those materials in a location accessible to a crewmember during flight. However, when materials acceptable for cargo-only or passenger carrying aircraft are carried on a small, single pilot, cargo-only aircraft being used where other means of transportation are impracticable or not available, they may be carried without quantity limitation as specified in § 175.75 in a location that is not accessible to the pilot subject to the following conditions": paragraph (b) (3) is amended by changing the word "in" to read "is" in the second line.

§ 175.90 [Amended]

In § 175.90 the second sentence is amended to read, "No person shall place or transport a package that is damaged or appears to be damaged or leaking aboard an aircraft subject to this part."

§ 175.310 [Amended]

In § 175.310 paragraphs (c) (2) and (3) are amended by deleting the word "or" at the end of (c) (2), by changing the period at the end of (c) (3) to a semicolon and adding "or" immediately thereafter; paragraph (c) (4) is added to read, "(4) Fuel tanks attached to flammable liquid fuel powered equipment under the following conditions: (i) Each piece of equipment is secured in an upright position; (ii) Each fuel tank is filled in a manner that will preclude spillage of fuel during loading, unloading, and transportation; and (iii) ventilation rates which are maintained in the compartment in which the equipment is carried have been approved by the FAA district office responsible for inspection and surveillance of the aircraft on which the equipment is carried."

§ 175.320 [Amended]

In § 175.320, the table is amended as follows: In the table delete the word "metal" that appears before "tanks" in the "conditions" column for Gasoline, Oil n.o.s., and Combustible Liquid, n.o.s. The introductory text of paragraph (c) is amended by deleting the word "metal" in the third line; paragraph (c) (1) is amended by adding the words, "for the material to be transported" following "approved" at the end of the third line.

§ 175.700 [Amended]

In § 175.700 add a new paragraph (d) as follows:

(d) Except as provided in § 175.10, no person may carry aboard a passenger-carrying aircraft any radioactive materials except radioactive materials intended for use in, or incident to, research, or medical diagnosis or treatment.

PART 176—CARRIAGE BY VESSEL

§ 176.5 [Amended]

In § 176.5 paragraph (a) is amended by deleting ", and (f)" and by inserting "and" immediately before "(e)" in the second line; paragraph (b) (8) is added to read, "(8) A foreign vessel transiting the territorial sea of the United States without entering the internal waters of the United States, if all hazardous materials being carried on board are being carried in accordance with the requirements of the IMCO Code," the word "or" following paragraph (b) (6) is deleted and inserted following paragraph (b) (7); the period appearing at the end of paragraph (b) (7) following the word "vessel" is made into a semi-colon; paragraph (e) is amended by striking "146-29" at the end of the paragraph and substituting in its place "Part 146".

§ 176.11 [Amended]

In § 176.11 paragraph (a) is revised to read, "(a) § 171.2 of this subchapter notwithstanding, a hazardous material (other than an explosive or a radioactive material) being imported into or exported from the United States or passing through the United States in the course of being shipped between places outside the United States may be offered and accepted for transportation and transported by vessel (or by a motor vehicle used in connection with the discharge or loading of a vessel and not operating on a public street or highway) if the hazardous material is packaged, marked, labeled, classed, described, certified, and placarded in accordance with the requirements of the IMCO Code and otherwise stowed and carried in in accordance with this part."; paragraph (d) is revised to read, "Transport vehicles, containing hazardous materials loaded in accordance with specific requirements of this subchapter applicable to such vehicles, may be transported on board a ferry vessel or carfloat, subject to the applicable requirements specified in § 176.76, 176-100, and Subpart E of this part."; a new paragraph (e) is added to read "(e) Hazardous materials classed and shipped as ORM-D are not subject to the requirements of this part."

§ 176.15 [Amended]

In § 176.15 paragraph (a) the words "and inspect any shipment of hazardous materials as defined in this subchapter" are added at the end of this paragraph immediately preceding the period.

§ 176.27 [Amended]

In § 176.27 paragraph (a) is amended by striking the words "it has been certified by the shipper" and substituting therefor the words "he has received a

certificate prepared" in second and third lines; paragraph (b) the remainder of the section following "subchapter" in the ninth line is deleted and the following is added to read "or in accordance with the requirements of the IMCO Code. See § 171.12."

§ 176.30 [Amended]

In § 176.30 paragraph (a) is amended by adding the words "or his authorized representative" in the second line between the words "materials" and "shall"; paragraph (a) (3) is amended by striking the word "chemical" in the tenth line and substituting in its place the word "technical". Paragraphs (a) (6) and (a) (7) have been redesignated paragraphs (a) (7) and (a) (8). A new paragraph (a) (6) is added to read as follows: "(6) Any additional description required by § 172-203 of this subchapter." Paragraph (b) is revised to read as follows: "The hazardous material information on the dangerous cargo manifest must be the same as the information furnished by the shipper on the shipping order or other shipping paper, except that the IMCO "correct technical name" and the IMCO class may be indicated on the manifest as provided in paragraphs (a) (3) and (a) (5) of this section. The person who supervises the preparation of the manifest, list, or stowage plan shall ensure that the information is correctly transcribed, and shall certify to the truth and accuracy of this information to the best of his knowledge and belief by his signature and notation of the date prepared."

§ 176.48 [Amended]

In § 176.48 paragraph (c) is amended by deleting the word "container" in the first line; the words "freight container," are added preceding the word "highway" in the second line.

§ 176.50 [Amended]

§ 176.50 is amended by adding the word "activity" preceding "materials" in the next to last line in this section.

§ 176.63 [Amended]

In § 176.63 paragraph (a) the second sentence is deleted and a new sentence is substituted to read, "This Part prescribes additional requirements with respect to the stowage of specific hazardous materials in addition to those authorized in Section 172.101 of this subchapter."; the last sentence in paragraph (b) is deleted and a new sentence substituted therefor to read, "When an entry in § 172.101 requires "on-deck" stowage and is qualified by the requirement "shade from radiant heat", the stowage must be protected from the direct rays of the sun by means of structural erections or awnings." In paragraph (d) the words "on deck" are deleted and the words "under deck" are substituted in the next to the last line of the paragraph.

A new § 176.65 is added, following § 176.63, to read:

§ 176.65 Alternative stowage procedures.

When a hazardous material is to be loaded on board a vessel and it is shown to the satisfaction of the Coast Guard Captain of the Port for the place where

the vessel is being loaded that it is impracticable to comply with a stowage location requirement specified in the table in § 172.101 or a handling or stowage requirement prescribed in this part, the Captain of the Port may authorize in writing the use of an alternate stowage location or method of handling or stowage subject to such conditions as he finds will ensure a level of safety at least equal to that afforded by the regulatory requirement concerned.

§ 176.69 [Amended]

In § 176.69 paragraph (a) is amended by deleting the close parenthesis following the word "section" in the second line and adding a close parenthesis following the abbreviation "ORM" in the third line; in paragraph (c) the last sentence is deleted and new sentence is substituted to read, "When freight containers or barges containing hazardous materials are stowed on deck, they need not be stowed in the manner required by paragraph (a) if fire fighting equipment capable of reaching and piercing the freight container or barge is on board the vessel."

§ 176.76 [Amended]

In § 176.76 paragraph (a) is amended by adding, "unless otherwise approved by the Commandant (G-MHM)" within the parenthesis following "explosives"; in paragraph (a) (9) "may not" is changed to read "should" in the first line; paragraph (d) is amended by inserting a period after the word "stowed" in the seventh line and deleting the remainder of the sentence beginning with the words "on deck"; paragraph (g) (3) is revised to read "Portable tanks containing Flammable liquids or gases, Combustible liquids with flashpoints below 141° F. that are insoluble in water, or organic peroxides, spontaneously combustible materials, or water reactive materials must be stowed on deck irrespective of the stowage authorized in § 172-101. Portable tanks containing hazardous materials not restricted to on deck stowage by the previous sentence must be stowed in accordance with the requirements specified in § 172.101 of this subchapter."; in paragraph (g) (5) a comma is added after "magnesium" in the first line.

§ 176.78 [Amended]

In § 176.78 paragraph (a) is changed to read "(a) A power-operated truck (including a power-operated tractor, forklift, or other specialized truck used for cargo handling) may not be used on board a vessel in a space containing a hazardous material unless the truck complies with the requirements of this section."; in paragraph (d) that part of the last sentence beginning with the word "an" in the seventh line is deleted and the following is substituted to read "a power operated truck (except "E," "G," or "LP") may be used if approved by the local Captain of the Port"; in paragraph (h) (6) the word "an" is changed to read "in" in the last sentence.

§ 176.83 [Amended]

In § 176.83(a) Tables I and II are revised to read as follows:

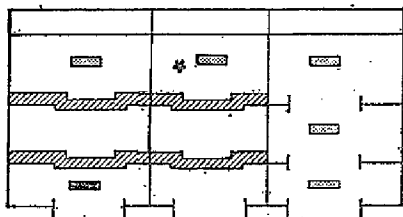
See footnotes at end of table.

RULES AND REGULATIONS

TABLE II

| | 1(A) | 1(B) | 1(C) | 2(A) | 2(B) | 3 | 4(A) | 4(B) | 4(C) | 5(A) | 5(B) | 6(A) | 6(B) | 7 | 8 | 9 |
|--|------|------|------|------|------|-----|------|------|------|------|------|------|------|-----|-----|-----|
| EXPLOSIVES A | 1(A) | * | * | * | 4 | 2 | 4 | 4 | 4 | 4 | 4 | 2 | 2 | 2 | 4 | 0 |
| EXPLOSIVES B | 1(B) | * | * | * | 4 | 2 | 4 | 3 | 3 | 4 | 4 | 2 | 2 | 2 | 2 | 0 |
| EXPLOSIVES C | 1(C) | * | * | * | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 0 | 2 | 2 | 0 |
| FLAMMABLE COMPRESSED GASES | 2(A) | 4 | 4 | 2 | --- | 0 | 2 | 1 | 2 | 1 | 2 | 4 | 0 | 0 | 2 | 1 |
| NONFLAMMABLE COMPRESSED GASES | 2(B) | 2 | 2 | 1 | 0 | --- | 2 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 0 |
| FLAMMABLE OR COMBUSTIBLE LIQUIDS | 3 | 4 | 4 | 2 | 2 | 2 | --- | 2 | 2 | 2 | 2 | 3 | 2 | 0 | 2 | 1 |
| FLAMMABLE SOLIDS | 4(A) | 4 | 3 | 2 | 1 | 0 | 2 | --- | 1 | 1 | 1 | 2 | 0 | 0 | 2 | 1 |
| FLAMMABLE SOLIDS LABELED SPONTANEOUSLY COMBUSTIBLE | 4(B) | 4 | 3 | 2 | 2 | 1 | 2 | 1 | --- | 1 | 2 | 2 | 1 | 0 | 2 | 1 |
| FLAMMABLE SOLIDS LABELED DANGEROUS WHEN WET | 4(C) | 4 | 4 | 2 | 1 | 0 | 2 | 1 | 1 | --- | 2 | 2 | 0 | 0 | 2 | 1 |
| OXIDIZERS | 5(A) | 4 | 4 | 2 | 2 | 0 | 2 | 1 | 2 | 2 | --- | 2 | 0 | 1 | 1 | 2 |
| ORGANIC PEROXIDES | 5(B) | 4 | 4 | 2 | 4 | 2 | 3 | 2 | 2 | 2 | 2 | --- | 2 | 1 | 2 | 2 |
| CLASS A POISONS | 6(A) | 2 | 2 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 2 | --- | 0 | 1 | 0 |
| CLASS B POISONS OR IRRITATING MATERIALS | 6(B) | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | --- | 0 | 0 |
| RADIOACTIVE MATERIALS | 7 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 0 | --- | 2 |
| CORROSIVE MATERIALS | 8 | 4 | 2 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 0 | 0 | 2 | --- |
| OTHER REGULATED (ORM) MATERIALS | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | --- |

In paragraph (c) (4) (i) the word "of" is changed to read "or" in the third line; In paragraph (c) (4) the diagram is amended to read as follows:



*When the stowage location of the incompatible package is in this relation to the reference package, at least one of the intervening decks in the vertical plane must be resistant to fire and liquid.

In paragraph (d) (3) (iv) (C) the words "and water" are added at the close of the paragraph immediately before the period.

§ 176.88 [Amended]

In 176.88 a new sentence is added at the end of the section to read, "Vessels in a service similar to a ferry service, but not over a designated ferry route,

may be treated as a ferry vessel for the purpose of this subpart if approved in writing by the District Commander."

§ 176.105 [Amended]

In § 176.105 paragraph (c) the word "slide" in the 12th line is changed to read "slid".

§ 176.135 [Amended]

In § 176.135 paragraph (d) the word "the" in the 3rd line is changed to read "this".

§ 176.138 [Amended]

§ 176.138 paragraph (b) (3) the word "spaces" at the end of the 18th line is changed to read "spacers".

§ 176.144 [Redesignated]

"§ 176.114" which appears in the section reading following the text of § 176.141 is redesignated "§ 176.144".

§ 176.205 [Amended]

In § 176.205 paragraph (a) the words "ventilated hold or compartment" in the second and third lines are deleted and the words "hold or compartment capable of being ventilated" are substituted; paragraphs (b) (1) through (b) (8) are redesignated (b) (2) through (b) (9) re-

spectively and a new paragraph (b) (1) is added to read, "(1) Each hold or compartment must be ventilated."

§ 176.305 [Amended]

In § 176.305 paragraph (b) (1), is amended by adding, "except that the stowage of packaged flammable liquids with a capacity of 110 gallons or less and with flash points above 73° F. may be in non-ventilated holds" immediately before the semicolon at the end of the paragraph; in paragraph (b) (2) (i) the word "or" in the second line is changed to read "on".

§ 176.315 [Amended]

§ 176.315 is amended by adding a new paragraph (e) to read:

(e) The requirements of this section do not apply to portable tanks and their contents authorized under 46 CFR Subpart 98.35 or 46 CFR Part 64.

§ 176.905 [Redesignated and amended]

In § 176.328 paragraph (c) is amended by changing the words in the parenthesis in the 8th and 9th lines to read, "(See 46 CFR 70.10-44 and 90.10-38 for U.S. vessels)"; and § 176.328 is redesignated § 176.905 and placed in its proper sequence.

§ 176.410 [Amended]

In § 176.410 paragraph (a)(2) is amended by changing the comma to a period after "coating" and deleting the remainder of the paragraph; paragraph (a)(3) is amended by changing the comma to a period following "coating" and deleting the remainder of the paragraph, and paragraph (a)(4) is amended by changing the comma to a period following "mixture" and deleting the remainder of the paragraph, paragraph (a)(6) is revised to read, "(6) Ammonium nitrate mixed fertilizer." and paragraph (a)(7) is revised to read, "(7) Ammonium nitrate-phosphate."

§ 176.415 [Amended]

In § 176.415 the introductory text of paragraph (a) is amended by adding, "or Captain of the Port" immediately before the colon in the tenth line; paragraph (a)(1) is revised to read, "(1) Ammonium nitrate (organic coating)."; paragraph (b)(4) is amended by adding before the period at the close of the sentence, "mixture containing 40 percent or more fine calcium carbonate or dolomite"; paragraph (b)(5) is revised to read, "(5) Non-acidic ammonium nitrate mixed fertilizer containing less than 5 per cent organic material and 60 per cent or less ammonium nitrate." The introductory text of paragraph (c) is amended by adding "or Captain of the Port" preceding "may" in the last line; in paragraph (c)(4) "during loading, unloading, or handling operations" is added following "status" in the 7th line.

§ 176.600 [Amended]

In § 176.600 the text is designated as paragraph (a) and a new paragraph (b) is added to read as follows: "(b) Each package bearing both a Poison Gas Label and a Flammable Gas Label must be segregated as a flammable compressed gas."

§ 176.800 [Amended]

In § 176.800 paragraph (b) is amended by removing the period at the end of the paragraph and adding "except when stowed in a freight container, or a

barge, carried aboard a vessel, that is readily observable."

§ 176.805 [Amended]

In § 176.805 paragraph (a) is revised to read, "(a) When break bulk corrosive materials being transported on a vessel are stowed on deck: (i) Provisions must be made for leakage from any package to drain away from other cargo into an overboard scupper or freeing port. The drainage may not enter an enclosed drainage system other than a direct overboard scupper. If this stowage is not practical, sufficient clean dry sand must be placed under and around the lower tier of packages to absorb any leakage." Paragraph (b) and (c) are redesignated paragraphs "(a)(ii)" and "(a)(iii)" respectively.

§ 176.900 [Amended]

In § 176.900 paragraph (i) is amended by adding "but may not be stowed in the same hold with other Flammable solids" immediately before the period at the end of the paragraph.

PART 177—CARRIAGE BY PUBLIC HIGHWAY

§ 177.811 [Amended]

In § 177.811 paragraph (b) the words "of hazardous materials" are added in the first line following "package."

§ 177.817 [Amended]

In § 177.817 paragraphs (a) and (b) are revised; paragraphs c(i) and (ii) are redesignated as (c)(1) and (c)(2); the introductory text of paragraph (d) is revised; paragraphs (d)(1) and (d)(2) are deleted as follows:

(a) *General requirements.* A carrier may not transport a hazardous material unless it is accompanied by a shipping paper that is prepared in accordance with §§ 172.201, 172.202, and 172.203 of this subchapter.

(b) *Shipper certification.* An initial carrier may not accept hazardous material offered for transportation unless the shipping paper describing the material includes a shipper's certification which meets the requirements in § 172.204 of this subchapter. The certification is not required for shipments to be transported

entirely by private carriage and for bulk shipments to be transported in a cargo supplied by the carrier.

(d) This section does not apply to materials classed as an ORMA-A, B, C, or D.

§ 177.819 [Removed]

Section 177.819 is deleted in its entirety.

Effective date: In this effective date provision (41 FR 16131, amended 41 FR 26014) paragraph (4) is amended by changing the comma following "1977" in the fourth line to a period, and by deleting the remainder of the paragraph. In paragraph (6), the following line is deleted from the table:

| Hazard class (material) | Placard adopted under docket No. HM-103/112 | Equivalent placard required by pt. 174 on June 30, 1976 |
|-------------------------|---|---|
| Combustible... | COMBUSTIBLE | DANGEROUS |

The changes effected by this publication consist of clerical corrections, clarifications and relaxation of certain previously published requirements. As these changes are being made as a consequence of public comment on regulations published four months ago, and because of the need for expedited publication in order to avoid disruption of the staged implementation adopted for those regulations, further public notice and opportunity for comment is being dispensed with, and the amendments contained herein are effective upon publication in the FEDERAL REGISTER (subject to the applicable effective date provision, 41 FR 16131, amended 41 FR 26014 and further amended herein).

(18 U.S.C. 834, 46 U.S.C. 170(7), 49 U.S.C. 1471, 1472(h)(1), 1807) 49 CFR 1.53(e)-(h).

Issued in Washington, D.C. on August 20, 1976.

JAMES T. CURTIS, Jr.,
Materials Transportation Bureau.

[FR Doc.76-27515 Filed 9-17-76;8:45 am]



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